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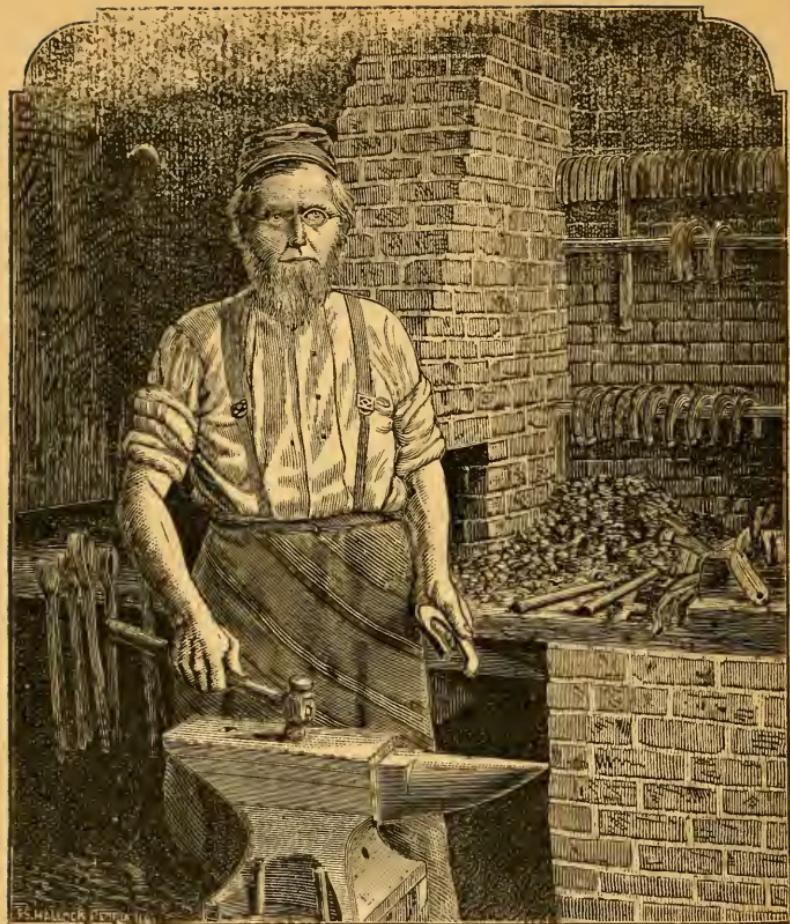
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THE HORSE.

A BOOK FOR THE PEOPLE.

CONTAINING

THE PRACTICAL EXPERIENCE, IN ALL ITS FORMS, OF A HORSEMAN
OF THIRTY-SEVEN YEARS STANDING; ALSO EVERY DESIRA-
BLE KNOWLEDGE OF THE HORSE, AND HOW TO HAN-
DLE, SHOE, AND TAKE CARE OF HIM; WITH
A NUMBER OF RECEIPTS WHICH THE
AUTHOR HAS USED FOR YEARS,
AND FOUND TO BE GOOD
BOTH FOR THE HORSE
AND FOR MAN.

BY B. PITCHER.

WITH APPENDIX,

CONTAINING

A GENERAL HISTORY OF THE HORSE; TREATISES ON THE EDUCA-
TION AND AGE OF THE HORSE; AND IN CONCLUSION,
THE STATUTES AND BETTING-RULES OF "THE
NATIONAL TROTTING ASSOCIATION."

FIFTH, ENLARGED AND IMPROVED, EDITION.

43 ILLUSTRATIONS.

PUBLISHED FOR THE AUTHOR.

THE GERMAN NEWS COMPANY,
CHICAGO:
1881.

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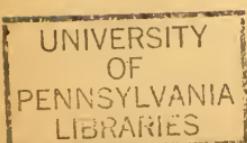
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TUCKER, NEWELL & Co., PRINTERS, CHICAGO.

P R E F A C E .

To THE PUBLIC :

In presenting this book to the public, I am well aware of the prejudice that now exists in the minds of the people against all books of this kind, and will here say that I am no professor, college graduate, horse doctor, or doctor of any kind, but a humble mechanic. What is contained in this book is my experience and observation for the last thirty-seven years.

Most works on this and kindred subjects are written by men who, though having a *theory* on the matter, cannot take the hammer, and follow their own advice. The book teaches how the horse should be bred, broken, handled, shod, doctored and cared for ; together with a number of valuable receipts collected by the author and used by him for years, any one of these being worth the cost of the book.

THE AUTHOR.

PREFACE TO FIFTH EDITION.

The extraordinary sale this work met with in course of the first year of its appearance, has induced the publishers to issue this fifth edition, considerably enlarged and improved in every respect. Many valuable illustrations have been added, and, in fact, no pains have been spared to render the work a useful and reliable guide to horse-owners. Believing that we thereby supply a long felt want, we trust the book will, in its new form, meet the favor of all horse-owners and every friend of horses.

THE PUBLISHERS.

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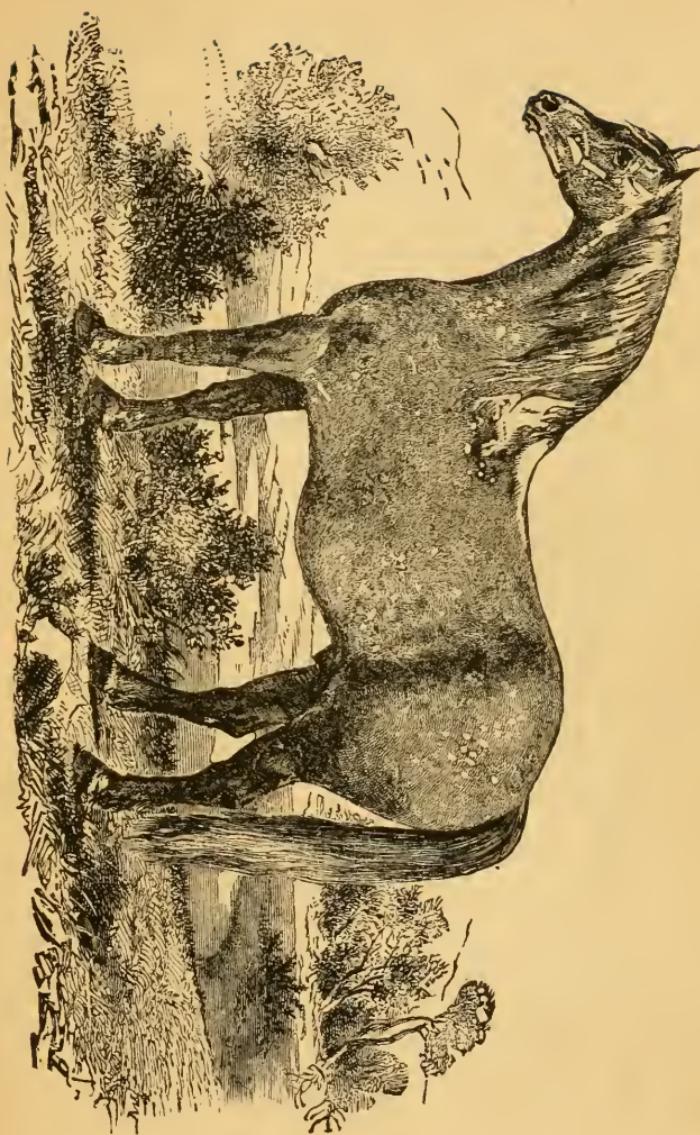
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LORD CLYDE.



THE OLD HORSE'S COMPLAINT.

BY FRANCIS S. SMITH.

I once had a master who thought me a prize,
The gem of his stable, the light of his eyes;
He called me pet names when I fed from his hand,
And gave me a stall which was costly and grand;
He watched me with tenderness, made soft my bed—
No draught was allowed to blow over my head;
No ill could assail me, no danger come nigh,
And my hay was the sweetest that money could buy.

My satin-like hide was by every one praised;
I'd a clean set of limbs, and like stars my eyes blazed;
My quarters were broad, and my shoulders were strong,
And my tail, mane and foretop were silky and long.
I was a true type of the thoroughbred horse,
And when in a race I flew over the course,
No urging was needed, no spur my flank tore—
My pluck always carried me first to the score.

But time sapped my strength, and my triumphs were o'er;
With the young and the fleet I could struggle no more,
And one day my master remarked, with a sigh,
“The old horse is in the way now, and must die!
He is old and decrepit and eats too much hay.
So put on his halter and lead him away:
Make sure of your work, take him off to the plains,
Then pull out your pistol and blow out his brains!”

I am ready and willing to yield my last breath,
But still it seems hard *he* should order my death.
If I had the power I'd work for him still—
But enough! it is over!—now hear my last will:
Let my hide into leather for harness be made,
Give my bones to the turner for use in his trade,
Then lay the old carcass, at set of the sun,
'Neath the soil on the track where my triumphs were won.

GENERAL REMARKS.

THE author belongs to no particular sect or school. He believes that the enlightened physician will cull something valuable from all sects and systems, and from every mode of treatment that has been employed, even by the most humble authors. The utility of this book will consist mainly of its practical suggestions. It will furnish reliable memoranda in many emergencies.

Many diseases commonly considered incurable are found to be readily curable, and others that were considered difficult to cure are found curable. Contracted feet, corns, quarter-cracks, however severe, are absolutely curable, with scarcely an exception. Contraction and navicular diseases are absolutely prevented by a proper method of shoeing. In the early stages of founder and knee-spring they are readily curable; and in the latter stages, where they are not absolutely curable, they can be improved to a remarkable degree. The author holds views and opinions upon these matters which will bear the test of experiment—more than can be said of much that has been written and said about the foot of the horse. Its practical value to horse breeders and owners cannot be over-estimated. The author considers his theory and practice upon the diseases of the foot of the horse absolutely unassailable, and he purposes to devote his entire time and energies to the instruction of others, believing that while he is thus subserving his personal interests, he will be promoting the higher interests of humanity and civilization.

In selecting a horse, first make up your mind what kind of labor you mean him to perform; for there are the same rules to be observed in the horse that there are in the man. If I wanted

a man to blow and strike in the blacksmith-shop, I would not select a young man with narrow chest, slim limbs and fine, delicate countenance, weighing only from eighty to one hundred pounds, where one hundred and fifty pounds are necessary, with broad chest and shoulders; for to do hard work it is very essential to have strong, well-developed muscles, and weight to back it. Horses, like men, are adapted some to light work and some to heavy.

The first thing I look at in selecting a horse is his feet. If they are deep walls, full, round, broad heels, nice, soft, large frog and black hoofs, then they will do; white hoofs are not as tough as black ones. Then I look farther. No foot, no horse. Then examine his eyes; then all over. A good large sheath and small rectum is a good sign; close ribbed, round hips, full breast and shoulders, well-raised withers, a fine neck and head; and see that he carries his head at a proper height without checking—I am no friend to checks. Let the horse carry his head in his natural position, then he will travel easy. See that he stands with his feet well under him. Never buy a horse with a roached back or a hollow one, for they are weak in the spine. Select for slow work and heavy hauling, fourteen hundred pounds and upwards; for the farm, eleven to thirteen hundred pounds; for the buggy, eight to eleven hundred pounds.

The old Mohawk Dutchmen of New York always had good horses. Their rule was to select a good horse,—round built, short legs. For they said they did not want too much daylight under them; also, one that would eat hearty, for if they cannot eat they cannot work. Watch a horse when he eats. If he sticks his nose clear to the bottom of the manger, and paws, he is a good one. He can work. Large, round, well-built horses can stand hard work; but a tall, raw-boned horse cannot do the work, and will eat as much, or more, than the round, fine-made one. In driving horses, when you start in the morning first drive slow, for their stomachs are full, and they feel heavy, and if driven fast they will be in much pain. If on the road, water often, but only a little at a time. This keeps their mouth and nostrils moist,

and they will breathe easy. At noon put your horse in a stable, cover a little while until he cools off. Give a little hay moistened with clean water. After he is cooled off, then give a light draught of cold water and a small quantity of grain. Feed lighter at noon than at night or morning. Avoid stopping your horse in a strong current of air, when warm, without putting on a blanket, if you can help it; for he is liable to take cold, and this is the cause of founder and lung fever. Do not be in too great a hurry to get in the house—first take good care of your horse.

GENERAL TREATMENT.

Rugs and flannel bandages conduce to the vigor of the circulation through the skin and extremities. Food should never be forced upon a horse, except in extreme cases. He should be tempted by choice bits. Food, however good, acts as an irritant upon a disordered stomach. Bran, carrots, oatmeal, linseed and linseed cake, green food and hay tea, furnish the best dietary for sick horses. Steaming by hot bran mashes, or hay tea, is good in all diseases of the air-passages. Linseed, from its nutritious qualities and oily nature, is soothing to the irritable mucous membranes. Cold water is refreshing, and should be always near the sick horse. Bandages are applied to the legs for the sake of pressure, moisture, warmth and protection.

Cooking food for horses, as a steady feed, is becoming quite universal in America as well as in the old countries. In an interview with the President of the United States Steam Feed Company, who originated the practice in this country, I was impressed with the theory, and took great pains to demonstrate the practical value of their feed prepared in Chicago. I found the opinion universal, that it improved the horse, and by the increased nutriment by cooking, was more economical, insuring perfect freedom from colic and other diseases incident to fermentation; and I believe when proper attention is given to the subject, the time will not be far distant when cooked food will be the rule and not the exception.

CLIPPING HORSES.

This is carried on to a great extent at the present day in large cities, and as I think it a great injury to the horse, in various ways, I thought I would give this subject some attention in this book, and in so doing it may do some good to the horse and owner.

In a recent number of Dunton's "Spirit of the Turf" I found an article on this subject by Dr. G. S. Otis, so ably and well written that I have taken the liberty to take a few extracts from it. "The practice of clipping horses was introduced some sixty years ago by Spaniards; and, according to Mr. Gamgee, it was also customary in England, at one time, to shave the horse. After this operation was completed the animal was as bare as the hide of a pig that had just been killed, scalded and scraped, and if delayed until the growth of the thick coat had subsided, the horse remained throughout the winter naked like an elephant. Advocates of clipping urge, and with perfect truth, that it diminishes the labor of the groom; that it prevents the horse from sweating in the stable, and that the animal perspires less at its work." Prof. Going uses as an argument in its favor, "that owners reap great benefits from it. Otherwise they would not have it done."

In our opinion, the practice of allowing an animal to run about in full possession of natures' clothing during the summer heat, and then to deprive them of every protection during the winter months, is not only cruel to the animal but also highly injurious.

There are four depuratory surfaces—the skin, lungs, digestive surface and kidneys. Each is continually eliminating materials, many of which, if retained, would prove injurious to the animal. It has been estimated that a horse weighing eight hundred pounds loses, in twenty-four hours, about fourteen pounds and five ounces of fluid by insensible perspiration. That which is caused by severe exercise is involved in much greater quantity, and by accumulating on the surface it becomes visible and forms sweat. This perspiration is a direct product of vital process, and not a mere exudation of watery particles through the skin, as many suppose. In the clipped horse the surface of

the body is easily chilled, the blood-vessels of the skin become contracted in their diameter, partially shutting up the natural outlet of the superfluous heat of the body, and at the same time checks the exit of waste matter which ought to be thrown out, and which is known to be as injurious to the animal's system as an active poison administered to the horse through the mouth. The skin, the bowels, the lungs and the kidneys sympathize readily with each other, because they have all the common office of throwing waste matter out of the system, each in a way peculiar to its own structure, so that if the exhalation from the skin, for example, be stopped, by matter which it was charged to excrete, it will most probably be thrown upon one or other of the above named organs, whose functions will become excited; and if any of them, from constitutional or accidental causes be already weaker than the rest, as often happens, its health will naturally be the first to suffer. In this way the bowels become irritated in one animal, and scouring is the consequence, while in another it is the kidneys that become affected, giving rise to diabetes. Shepherds are well aware that sheep, after being sheared, not infrequently die of tetanus, inflammation of the lungs and bowels, and some are affected with a peculiarly malignant form of erysipelas. Veterinary surgeons are also aware that clipping the heels and legs of horses exposes the skin to wet and dirt, causing inflammation, ulceration, deep fissures in the heels, attacks of grease, swelling of the legs, stiffness of the joints, etc. etc. If such pathological conditions arise from clipping the heels and legs alone, what must the consequences be where the whole body is denuded of hair? But, says the advocate of clipping, the horse should be well clothed and the stable kept warm to make up for deficiency of the last coat. We will here state that no number of blankets and no degree of stable-heat, obtained as it is at the expense of purity of the atmosphere, can make up for the uniformly distributed hairy coat. The hair, being a bad conductor of heat, prevents that of the horses' body from being quickly dissipated, and protects the animal from the injurious influence of sudden external changes. Mayhen says the clipped horse is a deformity. It requires no practical eye to see

that the hair of the clipped horse is unnatural. It is lighter. A black horse becomes a rusty brown ; it is dull and stubborn, looking most unlike that polished surface which is natural to the quadruped. In conclusion, it is proper to state that clipping is being carried on to a great extent in Chicago and other cities the present winter. The weather thus far has been very mild, consequently the amount of suffering to animals is somewhat reduced. Otherwise many owners would have cause to regret that they ever sanctioned the foolish practice of depriving the horse of its natural protection, the hairy coat.

NOTES ON NURSING.

When a horse is ill he should be placed in a clean, well-ventilated stable. Never, if you can help it, put a horse in a basement stable, sick or well, if you can avoid it. Give them plenty of air — it is cheap. Give your sick horse a large box stall, with plenty of clean bedding, and as often as it becomes filthy, remove it, particularly in colic. Sufficient clothing should be put on to insure a comfortable degree of warmth. The legs should be wrapped in flannel bandages, which should be removed occasionally ; the legs hand-rubbed, and put on again. In diet, follow the cravings of the appetite. Give little and often. Good and clean hay is always good in small quantities. Cold water and hay tea should not be forgotten. Bran mashes are good in most illnesses, and boiled linseed in cases of sore throats and colds. Carrots and boiled oats are always relished during recovery from every illness. Also, use green food when it can be got. Occasionally it is necessary, when the horse is unable to eat, to give food in a drench or injection. Avoid rough usage, both for humanity's sake and for medical reasons. An angry word, or rough handling, causes a great increase of suffering. Always take the gentle side. My ideas about taking care of well horses are to have them fat in the fall. Then they are half wintered, if you keep them in a warm stable, as you should in all cases. Try this, and see if you do not winter your horses on nearly half of the usual quantity of food.

THE CHECK, OR THE OVER-DRAWN CHECK-REIN,

Is, I think, a general source of torture to the horse, for it forces the head and neck out of its natural position. My idea is, that a horse, in order to travel naturally and easy, should have the free use of his head and neck. Then he is comfortable. If he has naturally a high head, he will carry it so; if not, all you do by checking to make him is a source of great torture. Some claim that the reason they use the check is, it makes the horse look stylish and graceful. I do not think so. Some of the best horsemen of the present day have discarded the check-rein altogether, and especially the over-drawn, with a small separate bit, for that draws directly up against the upper jaw or roof of the mouth, and if used long will make the gums very sore. Now stop this cruel treatment. If you do not think it is cruel, try it on yourself. Draw your head back until your head forms a right angle with your body, and you would be little less deformed than is a horse in the position described. Every horse owner and driver should discontinue a practice which is at once cruel, useless and inelegant. Nothing to my eye looks so nice and comfortable on a horse as a light bridle without blinders or check-rein, and I am very glad to see so many adopting this plan.

GENERAL CAUSE OF LAMENESS IN HORSES.

Sprains, rheumatism, founder, swellings, diseases of bone, injuries to the feet, such as contraction, corns, quarter-cracks, paring away the frog, braces and sole, burning the foot with a hot shoe, the thrush, disease of the frog. Bad fitting collars will lame the shoulders and make fistula and poll-evil; strain of the knee joint, caused by too long toes and low heels. To cure, pare down the toes and leave the heels alone. Put on high-heeled shoes, and bathe the whole legs with hot salt and water, and rub the cords well with black oil liniment. This will cure bad cases of knee-spring. In nearly all cases of lameness I put on high-heeled shoes, bathe freely with hot salt and water, and use the black oil liniment and bandage. This, with a few days'

rest, will cure most cases if taken in time, and that is when they first limp, for if they were not sore they would not limp. There is no deception in a horse.

You will find cures under the proper heads.

NAVICULAR DISEASE.

This is a disease of the navicular bone that connects with the coffin-bone, forming a combination joint of the coffin and navicular bones in the hoof; the disease is caused (in nearly all cases) by contraction of the foot, causing the cords, tendons, ligaments and blood-vessels, to contract and make the joint stiff and sore; the horse in traveling will chafe this joint, and it becomes inflamed and sore. There are other causes, such as strain and bruises of all kinds, picking up nails, etc. The most successful mode of treatment is to poultice for a few days with linseed meal, and soak in warm salt and water; then use the black oil liniment, and you will effect a cure; this will take the soreness out and expand the foot; never blister or put *in seatons*, *it will do no good.*

CUPPED ANKLES.

This is caused by strain of the ankle joint, and if not attended to at once the cords and ligaments will become sore, and the horse will stand on his toe to relieve the joint, and in this way the cords will contract; the mode of treatment is, first put on high-heel calks, then bathe with vinegar, one quart; saltpetre, one-quarter pound; oil of wormwood, one ounce; apply hot and bandage tight, and in a little while your horse is well — if attended to at once.

LAMENESS IN THE STIFLE JOINT.

This is caused by slipping, causing strain of the stifle joint. The ligaments that surround the joint will part and relax, and the joint will slip out of place. Treatment: put on high heels on the shoe, ferment the joint on and around with vinegar, one quart; saltpetre, one-quarter pound; oil of wormwood, one ounce; apply hot as you can, then bathe with the black oil liniment.

Let the horse rest a few days in order that the joint and ligaments may become united again, and you will effect a cure.

CRUEL TREATMENT OF HORSES' FEET.

The treatment of horses' feet is a subject I have given much thought to, as I have shod horses for over thirty-seven years. If the people will allow me to give them a few hints which I consider valuable, I may be the means of doing some good to the horse and its owner, and save the torture which the former now endures in consequence of improper shoeing. Some people think (or act as though they did) that the horse's foot is a block of wood, susceptible of any kind of treatment. What makes me think so is the way they treat it. Nearly all shoers in large cities at the present day, unless told not to, cut the frogs, braces and soles and heels, leave the toe long, and then fit the shoe narrow on the ball of the foot, and turn the heels out, and cut the wall or shell at the quarters. They fit a shoe concaved, clear back to the heels, and then burn the foot with the hot shoe until it has a bearing. They also put on clips at the toe, and often on the side, and burn them in, also. Now, all this treatment I consider wrong and hurtful. Why do we shoe horses? It is because we at the present day have macadamized and paved streets and roads, and the horse's feet cannot stand the hard work required of him barefooted; consequently, we put iron on them to protect them, the same as ferrules on canes, tires on wagons, etc. When we put iron on horses' feet, we should put it on so that it will not be a source of torture instead of a benefit. The way to shoe a horse properly is to take a long look at the foot, and find out what it is made of, and try to come at some rational understanding as to the intention of the Creator when he made it, and leave it as we find it, except to protect the wall against wear, and prevent them from slipping; for if we attempt to improve on what the Creator has done, I think we will fail. The way I shoe a horse is this: Look and see if the foot stands in a natural position, so he stands upright, as we do. If so, level the wall to receive the shoe, and nothing more. Never cut the frog,

braces and soles, nor the heels. Let nature do its own work. If let alone, once in six weeks or two months the frog, braces and soles will shed. Make the shoe light at the toe, heavy at the heels (for the heels are the tender part of the foot). Put the nails well forward of the quarters. Use light nails, concave the shoe until you get to the quarter, to protect the soles, then convex the heels a little, and you cannot make narrow heels, corns, quarter-cracks or contracted feet. Fit the shoe cold, and fit it to the foot, not the foot to the shoe. Follow the wall nicely. Fit the shoe as broad as you can. Bring the heels around to the frog, but not touch it. Never make the shoe longer than the foot. Never use bar shoes; in every case they are wrong and hurtful. Never rasp the outside wall, for you destroy the gloss or enamel that protects it. This improper method of shoeing is the cause of more lameness than any other one thing; it causes corns, quarter-cracks and contracted feet. Whoever pares or allows to be pared a horse's sole, brace or frog, and burns the foot with a hot shoe in front or sides, is guilty of cruelty to the horse, whose foot is so mutilated. No frog, no foot; no foot, no horse.

HORSE TALK.

Horses, I think, have reasoning powers, and are susceptible of fine feelings. I imagine I hear a horse talk thus to his owner: You and I are partners—we each have our respective labor to perform; but I am the silent partner, and have been for some time. Now, suppose we reverse it. You take the harness and the shafts and haul the load, and I will take the reins and whip. I will put the blinders on the bridle so you cannot see only in front, then I can hit you with the whip before you can see me. Then if something makes a noise behind you, or something passes by you and you get scared and shy out of the road and nearly upset the wagon, I will yank and pull you back in the road, and every step you take I will whip you, for you cannot see only in front. I will learn you to keep the road. I will put on the over-drawn check, and if you don't hold your head up to suit me, I will make you, if I break your neck and spine in so

doing. Then, when I stop and hitch you to eat post-meal for three or four hours, I will leave you checked up to learn you to hold your head my way. Then, if you slip in traveling, I will take you to my horse-shoer and tell him that I want you shod fine so that your feet will look nice. He will cut your frog, braces, sole and heels, then fit the shoe to your foot hot and burn it to a crisp, then nail it on and rasp the outside of the foot to make it look nice; and if you do not stand, and without saying a word, I will tell the shoer to hit you a few licks with the hammer to bring you to your senses. If this does not do, I will hold you while he puts the twitch on your nose. Then I guess you will stand and learn some sense. Then if you get lame I will take you to some shoer and tell him you have got corns and quarter-cracks, your feet are withered, they are hot and full of fever. He will say, I will fix that all right. I will put on bar-shoes, and give you another cutting and burning. Then if you don't get well, I will take you to a veterinary surgeon. He will put you through an examination. He will say you are lame in the shoulders; he will rowel and blister your shoulders, and still you are no better. Now, I will turn you out, I am sure that will cure you. I will leave you out awhile—you are a little better. I will bring you in, take you to be shod, and the shoer will give you another cutting and burning, and in a little while you are as bad as ever. Well, I think I will fix you up and sell you. Now, I will take you to one of those horse-clippers, have your hair cut and burnt off; then you will look nice, no matter if the pores of your skin are closed and sore, and you break out with the mange. You have nothing to say—you are mine. You are nothing but a horse. Now, if you go through this kind of treatment and live, you will know something that I have suffered at your hands.

SOAKING AND BATHING HORSES.

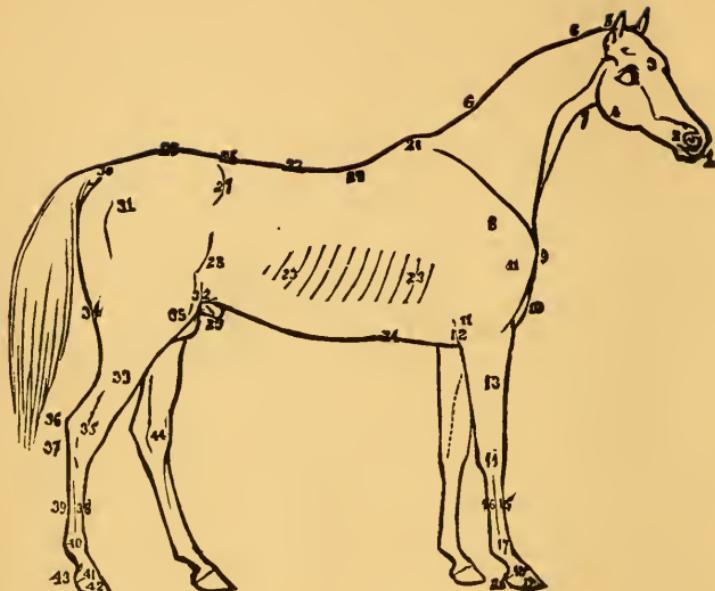
This is one of the most important subjects in this book. You have a horse that is stiff in the shoulders, or he has been foun-dered, or lame everywhere. You cannot use too much salt and water. In the summer use it cold; in the winter use it hot as

you can bear your hand in. Now, the way to do so is to take an iron-bound coal-oil barrel, saw it off about to the third hoop; then you have a nice soaking tub. Put it about half full of salt and water that will bear a potato; back your horse into a stall or one corner, and tie his head with guide straps each way so he cannot get out; then put his feet in there; take a sponge and bathe him well clear to the top of shoulders; for if the horse is foundered, or lame in the shoulders, he is lame clear to the feet, for the cords run from the shoulders to feet; then cover the shoulders with thick blankets, and bind the legs with woolen bandages so as to ferment and sweat them. Now this is almost indispensable in all stables, to use at night when you bring your horse in. Put his feet in the tub; take a foot-hook and pick out all the dirt in the foot, and if he has picked up a nail or stone you will be sure to find it, and at the same time you will feed the feet with moisture, and this is very important in cities on pavements, for they do not get the moisture that they do in the country, and they require it to keep them from contracting and becoming dry and hard. Now I use another soaking-box or vat to put the whole horse in and bathe him all over. Take two-inch plank in the rough and spike it together; then take oakum and cork the joints; then pitch them, and you have a good and cheap one. The right size is two by five feet in the clear, eight to twelve in depth; then put on side boards a little flaring, so the horse will not step out, and they will catch the water as you bathe the horse. This you can have on the stable floor. Lead the horse in at one end and out at the other, then you can get all around him to bathe. Use this, and you will see the benefit it is in keeping a horse from galls, for you wash off all the sweat and dirt, and toughen the skin. Use salt and water the same as in the other. There is another mode of soaking and bathing a horse's feet, and that is a soaking-boot. Some use a leather with a wood bottom; others use a wire web to put a sponge in. The objections I have to the first is, they soon wear out and are hard to keep on the feet; the other is, when the horse puts his weight on the sponge the weight presses out all the moisture in the sponge at once.

There is a boot now made by T. T. Furlong, 162 Washington St., Room 14, Chicago, Ills., that is the only sensible boot I have seen. It is made of malleable iron, strong, durable, effective and cheap. It holds the sponge, the sponge holds the moisture; you can also use it for a pattacing boot.

BALKY HORSES AND DRIVERS.

Some people think there are natural balky horses. I do not think so. There are more balky drivers than horses, in my opinion, and this is caused from the want of a proper understanding of the true nature of the horse. The colt, in the state of nature, before he is domesticated is in a state of ignorance of what a man wants of him, and he has to be learned as you would a child going to school, and if you do this in a proper manner you will not have any balky horses. I have seen men pull on the lines and whip a horse and halloo "whoa" and apply the whip, and do the same thing to make them go ahead. Now, this is wrong. How does the horse know which you mean? Others will put on more load than the horse can draw, and whip him if he does not haul it out of a mud hole, and then he says, "damn you," when the horse is doing all he can. Then he says you are balky, when the man is the one that is balky. Try and learn some horse sense; treat a horse as you would like to be treated yourself. Suppose you get tired and sit down to rest, and your master would put dirt in your ears or take a bundle of straw and set it on fire to make you get up and go to work. What would you think? You would feel like kicking him over, and I wish some of the horses would do the same thing. Treat a horse kindly and you will not have any balky ones, and keep your temper down, and take off some of the load. Give the horse a few gentle pats. It is better than high pitched words and whips. Try it.



POINTS OF THE HORSE.

HEAD.

1. Muzzle,
2. Nostril,
3. Forehead,
4. Jaw,
5. Poll.

NECK.

6. Crest,
7. Thropple or windpipe

FORE-QUARTER.

8. Shoulder-blade,
9. Point of shoulder,
10. Bosom or breast,
11. 11. True-arm,
12. Elbow,
13. Forearm (arm),
14. Knee,
15. Cannon bone,
16. Black sinew,
17. Fetlock or pastern-joint,
18. Coronet,
19. Hoof or foot,
20. Heel.

BODY OR MIDDLEPIECE.

21. Withers,
22. Back.

23. Ribs (forming together the barrel or ch t).
24. The circumference of the chest at this point, called the girth.

25. The loins.

26. The croup.

27. The hip.

28. The flank.

29. The sheath.

30. The root of the dock or tail.

THE HIND-QUARTER.

31. The hip-joint, round, or whirl-bone.
32. The stiffe-joint.
33. Lower thigh or gaskin.
34. The quarters.
35. The hock.
36. The point of the hock
37. The curb place.
38. The cannon-bone.
39. The back sinew.
40. Pastern or fetlock-join
41. Coronet.
42. Foot or hoof.
43. Heel.
44. Spavin-place.

THE HORSE.

THE horse is one of the best and most abused servants that our Creator has given to us for our use.

From the time he is taken up and put to work, or broken, he is maltreated. Then he is as a child: he does not know what you want of him. When you put the harness on him and tell him to go he has not had any training, yet you expect him to go at the word of command, and pull like an old horse, without having learned how to do all this. Then, if he does not obey, you get angry and begin to apply the whip, as you think that all horses must be taught to do all you wish them to do by the free use of the whip.

This, I think, is one of the worst of mistakes, for how does the colt know what you are whipping him for? He does not know the word "whoa" from the words "get up;"—how can he, since he has never been taught? "But," says one, "how can you teach a dumb brute?" I will say, in the same way as you would a child. You take a child and try to teach it, and every time it makes a mistake or does not do what you tell or expect it to do, strike it with a whip, and what would be the result? The child would always expect the whip, and if you did not apply it he would not obey you. I think the same is true of a colt. If you treat him kindly, and let him know that you will not harm him, he is your obedient servant.

I find this true in shoeing colts. When a colt is taken into a shop to be shod he does not know what he is there for any more than a child that is taken into a school-room for the

first time. You must teach him. Let me tell you what was the practice in New York, where I served my time.

When a colt was taken to a shop to be shod the owner must needs procure a quart of whisky—as the smiths in those days called it, a colt tail—before they would touch the colt. Then both colt and whisky had to suffer. Now commences the torture. The colt is in a strange place; he has no idea why he is there; he sees the fire and hears the ring of the anvil, and it necessarily frightens him. Then the smith, full of whisky, commences the work. The colt flounders; the smith says “whoa;” the colt don’t know what that means and continues to struggle; the smith strikes him with the hammer, but that does no good, for the colt is frightened. Now he says, “Damn you, I’ll fix you,” and puts a twitch on his nose, and three or four strong men hold him while the smith puts on the shoes, but *how*, he does not care—any way to get them on and get rid of the colt.

In this way he is shod. But *how*? His foot, that our Creator made round, or nearly so, is cut and burnt until it looks more like a clevis or a flat iron than like a horse’s foot; and, my word for it, every time he comes to the shop you will be obliged to go through the same process. Why? Because that is the way he was taught, and he will always remain so unless he is taught differently, and this may be done.

I am thankful that people are awakening more and more, each day, to the study of the horse and how he should be treated; and yet there are many at the present day that are still treading the same beaten paths that their fathers trod.

Now, I will tell you how a colt should be shod and handled. When he is taken to the smith shop he should have an old horse with him for company. Hitch them and let them stand for a short time. Then the smith should go to him, give him a few gentle pats on the neck, rub his head and legs, and in a few minutes the colt will allow you to do almost anything you wish with him. Why? Because he is not afraid.

Never get in a hurry in shoeing a colt, or keep his foot

up too long, for he will become tired and restless. Then dress the foot properly. Always look at the foot when it is on the floor and see if the horse stands level; if so, simply dress and level the rim or shell; never cut the frog or braces, or the sole, for when you do this you destroy the foot and take away what our Creator put there for a most useful purpose, as will be more fully explained hereafter. When you have the foot true and level, so that the horse stands squarely and straight up, then make the shoe to fit the foot. Bring it out to the edge of the shell all around to the heels, and not as some do, after they reach the quarter turn the heels out like to a bull's horns. This is wrong, for the shoe presses on the outside of the shell of the heels and presses the heels inward. This is, I think, one of the grand causes of, and has more to do with, making narrow and contracted feet than any other one thing. Make your shoes as light as possible; concave them till near the heels, then make them flat or a little convex. If you put on corks, put on short ones, for it is hard work for a horse to travel set up on high corks. Make the holes in the shoe small, so that you can use small nails. This is very important, in order that, after the nails are driven and clinched, they may not destroy the surface of the shell. Do not rasp the shell more than is necessary, and never above the clinches, for this destroys the enamel, or gloss, and makes it hard and brittle, and it will contract and grow rigid.

The shoe should be taken off in six weeks, the foot properly dressed, and the shoe put back; for the foot in that time will grow so much that the heels of the shoe will begin to rest on the braces and do great harm. "But," says one, "you want me to keep my horse in the shop all the time; besides, see what it will cost me. Why, there is John Smith, he is the best shoer I ever saw; he will make them stick three, four or six months. He is my man." Now, we will see whether he is or not. It is not the man that makes the shoe "stick" the longest that is the best, but he that keeps the foot in good order, and makes the horse travel easily.

Now we will take a horse that has had his shoes on for a long time, for the sake of economy, and how do we find him? He will stumble; his coffin and pastern joints are sore; his knees are sprung; he goes stumbling along, and in a short time the cords of his legs will contract and the contraction extend to the shoulder. Your horse is lame; you go to a horse doctor; he will bleed, blister and lay your horse up, and then charge you ten or twenty dollars. And still you are satisfied because you have done all you can. You ran to the doctor instead of listening to reason, as given to you by that ignorant blacksmith, that wanted you to have your horse shod often and kept in good order. Your horse is ruined. Who is your friend? Is this economy?

There are many ways by which the horse's foot may be spoiled, if we are to credit all that is said and written on the subject. One says at once, when looking at a foot that shows signs of disease: "Been fed when heated, or drank too much cold water." Another, "Stood on a hard floor too much; ought to have clay in his stall." Another, "Ate too much meal; oats are better for horses; meal too heating." But the genuine horseman at once exclaims, "He's seen some thunder," which means, in ordinary English, "hard drawing."

It is almost impossible to get a horse shod without having the frog cut away. All veterinary surgeons, all leading blacksmiths, agree that the frog should not be pared one particle, not even trimmed. No matter how pliable and soft the frog is, cut it away smooth on all sides, and in two days it will be dry and hard as a chip. You might as well cut all the leaves off trees and expect them to flourish, as to pare away the frog and leave a healthy foot. The rough, spongy part of the frog is to the foot what leaves are to the tree — the lungs.

The horse's foot is a most wonderful piece of mechanism, and excites far more surprise and admiration than the feet of all other creatures. So wonderful, indeed, is it, that any one who had not closely studied its structure and functions would scarcely believe the hard, insensible hoof could contain such a multiplicity of beautiful arrangements, all adapted to serve most

important purposes and to render the animal so useful to mankind. The bones are constructed and placed with a view to speed, lightness and strength; ligaments of marvelous tenacity bind them together so firmly that disunion is all but impossible, while they are so ingeniously disposed as not to hinder in the slightest degree the remarkably swift and easy movements of the bones upon each other; elastic pads and cartilages are situated in those parts of the foot where they are most required to protect it from jar, and serve to compensate for the absence of the toes, which are seen on the feet of all other creatures, except the horse species. All these parts are covered by a living membrane, which envelops them like a sock, and is exquisitely sensitive, in addition to being everywhere covered by fine networks of blood vessels in the greatest profusion. This membrane endows the foot with the sense of touch, without which the horse could not be so sure footed, nor run with such astonishing speed; and it also furnishes the blood from which the hoof is formed. The hoof itself, so rough, insensible, and to all appearances scarcely worthy of observation, reveals a world of wonders after we have exhausted those to be found in its interior. It is made of fibres, all growing in one direction — toward the ground — and that direction the most favorable for sustaining strain. These fibres are extremely fine, and they are hardest and most resisting on the outer surface; each is a tube, composed of thousands of minute cells, so arranged as to confer strength and durability, while the tubular form of the fibre insures lightness. Each part of the hoof has its own share of responsibility in protecting the living parts it contains. The *wall* is the portion we see when the horse is standing firmly on the ground. It grows from the upper parts of the foot, the *coronet*, and this growth is always going on to counterbalance the wear that is taking place at its lower border. Its outer surface is beautifully dense and smooth in the natural state, and altogether the wall is perfectly adapted to meet the wear that occurs when the horse is running at liberty in an unshod state. This is also the part on which the shoe rests, and through which the farrier drives the nails that attach it.

When the foot is lifted up backward, we see the sole and frog. The sole is the part that lies within the wall; it is slightly hollow in a good foot, and is thick, strong and covered with flakes of loose horn in one which has not been pared by a farrier's knife. The frog is a soft triangular piece of horn in the middle of the sole, toward the heel. It is very elastic and serves a most important purpose, as it acts as a cushion to prevent concussion, and also hinders the horse from slipping. The sole, frog and lower border of the wall have all to come in contact with the ground and loose stones; therefore, nature has furnished them with an abundance of horn to make them strong enough to bear the horse's weight, withstand wear and keep the delicate parts inside from injury.

So long as the horse is not compelled to work on hard roads his hoofs are well suited to all that is required of him; but our civilization demands that we should have paved and macadamized streets, and on these the hoofs would be quickly worn away, especially if the horse had to carry or draw heavy loads; consequently lameness would ensue. It is, therefore, absolutely necessary to prevent this mishap by shoeing the hoof with iron, as we shoe carriage wheels with tires, the ends of walking sticks with ferrules, etc. This shoeing has been a great boon to mankind, as it has rendered the horse a hundred-fold more useful than he otherwise would be, and has made him independent of the kind of road over which he has to travel.

The number of horses tortured and ruined by unreasonable paring and rasping, in addition to the heavy shoes, too small for the feet and badly formed, is beyond computation. The frog, braces, or bars, and sole should never be pared; they flake off gradually when they have reached a certain and proper thickness, which is once a month; and as they have to come in contact with the inequalities of the ground, and with the loose sharp stones so frequently on its surface, is it not reasonable to urge that they should be allowed to retain their natural condition? Whoever pares, or causes to be pared, a horse's soles, or braces or bars or frogs, or burns the foot with a shoe, or puts clips on the

shoe, either in front or on the sides, is guilty of cruelty to the horse whose feet are so mutilated. No frog, no foot; no foot, no horse.

The front of the wall should never be rasped. It destroys it, and makes it thin and brittle. It ought to be allowed to retain its close, glossy, tough surface, so well adapted for resisting the weather and holding the nails. As the wall is always growing, and as the shoe prevents its being worn down to a natural length, when the old shoe is taken off, in the operation of shoeing, the lower end only of this part of the hoof should be rasped down until the excess of length has been removed, nothing more.

The shoes should be as light as possible, and fastened on with as small a number of nails as will retain them, and never should be allowed to remain on the foot over four weeks. They ought to be the full size of the circumference of the hoof, and the hoof should never be made to fit the shoe, but the shoe to fit the hoof.

A proper and rational method of shoeing is a boon to the horse and its owner; an improper method, which destroys the integrity of the hoof and wearies the limbs, is a curse and a torture to the one, and loss and annoyance to the other.

When horses go to be shod at a forge, care should be taken that they are not ill-treated or frightened, particularly young horses. By bad treatment, or unskillfulness in handling their legs and feet, they are frequently made so timid and vicious that severe measures have to be resorted to in order to insure safety to the farrier while he is shoeing him. A few kind words, a few pats on the neck, a few gentle strokings of the limbs, and a little persuasive coaxing, will prove a thousand-fold more effectual in inducing horses to be patient in shoeing than all the harsh, loud-pitched words, hard knocks, twitches on the nose, and other unmeaning and unhorsemanlike proceedings can do. A humane and intelligent farrier is a boon to every community; but one who is harsh, inobservant, and pays no attention to perfecting his most useful art, is a torturer of animals and a destroyer of property.

Farriers, of all men who have to do with horses, can confer

upon these good creatures the greatest amount of relief and comfort, by attending to the simple indications of nature, and using their own common sense and judgment, instead of adhering to stupid and blind routine, which never improves, but, on the contrary, retrogrades. Every lover of the horse should see that its beauty is not deformed, or its utility marred by a system which is as outrageous to the meanest comprehension as it is disgraceful to the age we live in. The more we understand the great Creator's merciful intentions, the less likely are we to thwart them.

I have told you that you must teach a colt as you would a child. Now for how to do it. When a colt gets to be two or three years old you should begin to handle him, by patting him every time you approach him. Give him some name, he will soon learn it; give him an ear of corn, some salt or grass every time he comes where you are, for he will soon learn to like you. Then commence to handle his limbs and feet; put on a halter and lead him; then put on a biting bridle, turn him in the barn-yard, and by gentle means—not with a whip—teach him the word "whoa," the most important word you can teach the horse, since, when in after years anything goes wrong, and you speak the word "whoa," he will stop, because he was taught to do so at the sound of that word.

The next thing to do is to teach him the words "get up" or "go ahead." The bits should be put on once every day, for a week or ten days, but for a short time only, say one or two hours, that he may not become over-tired. Then put on a complete harness, turn him in the yard, and let him run for a time, for a few days. Then get a log of wood or a sled and hitch him to it, and drive him around the yard until he has learned the use of the bits, and will obey when you pull the reins; then hitch him, with an old horse, to a sleigh or wagon, and drive him slowly, always on a walk. This is one of the most important gaits of a horse—a fast walk; if he has a fast trot or run in him, he will show it of himself. Never try to make more of a horse than he really is, for if you do you will surely fail. And let me here say

this: In handling colts always control yourself; don't get excited. Follow these directions, and you will have good, obedient horses, safe to drive anywhere.

In working horses, feed liberally, work steadily and clean thoroughly is my motto. My great trouble is to have the horses rubbed dry and clean before leaving them for the night. Have a bucket of salt and water, with a quart of vinegar in it, always in the barn. Use it freely on breast, legs and back, wipe dry, and you will never have sore horses. Use a foot hook, clean out the feet well, and wash with the salt and water; put them in the water and wash thoroughly; you cannot give them too much moisture. The dirt gets under the shoes and becomes as hard as the iron, consequently it must be painful to the sole of the foot; the water softens the dirt, and the foot hook takes it out. Did you ever wash your feet before going to bed? Try it on a horse, and see if he will not say, "Thanks."

Where horses are worked six days in the week, thorough grooming is absolutely essential to their health. The more highly they are fed the more important it is to clean them. Most men use the currycomb too much, and the whisk and brush too little. I do not myself insist upon it, but I believe it would pay always to take the whole harness from the horse when put in the stable at noon, and don't be in too great a hurry to go to dinner, but rub them dry, washing the shoulders with salt and water, afterward thoroughly drying them with a cloth. I question if one farmer in a hundred duly appreciates how much he loses from having poor horses, and in not keeping them in vigorous health, and in a condition to do a maximum day's work.

RECEIPTS.

VETERINARY.

I PRESENT these receipts with confidence, since I have, by experience, fully tested their value.

BREEDING HORSES.

This is one of the most important subjects in this book — to breed good stock. You have a mare that is crippled; she is not worth anything for work, but is good stock; she has raised you several colts that is fine, and you don't want to kill her; but she is old and will not breed any longer. What are you to do? You say: "I have used the best horses that I can find, but to no purpose." Now I think I can show you how to breed the oldest mare that you have, even to twenty years old, and raise a colt every year, without any trouble, provided you follow my directions. When you have a mare that has not had a colt for some time, either from old age, or, as you think, from barrenness, and she will come around in season, or, as the saying is, she is "horsing," you examine her, by putting your hand into the opening, with the fingers held out straight, bearing upward toward the backbone, until you reach the womb or the mouth of the womb. This is a small lump about the size of a walnut. Then, with the fingers, ascertain if the opening of the womb is closed; if so, open it easily, first with one finger, then two, then three, until you are sure it is open, so that the womb will receive the discharge of the horse, and you will get any mare that will get a horsing with foal, even if she has not had a colt for two or three years. If you have one of this description, and you are anxious to breed her, have her examined first, then you are sure that she will breed. After the operation, let her stand one or two hours before you let the horse to her, or over night is better, if you can. This never fails.

BROOD MARES, COWS, ETC.

All brood mares and cows, say from three months from the commencement of pregnancy and up, are liable to have a premature flow of milk to the udder or milk veins. The udder and milk veins will become painful, swollen and full of fever, and if not relieved, will cause serious trouble, and will cause ulcers, and have to be lanced, and if not attended to in time will cause death.

Cure.—Use the soft-soap salve after first washing the udder or milk veins freely with warm soap suds, and wipe dry. Then move the bowels and urine if relief does not come. This is good to do in any case; and bathe the loins with black oil liniment to strengthen secretion.

SHOE BALLS, AS THEY ARE CALLED.

This is a lump or callus on the inner side of the fore leg, or the upper end of the fore arm near the body, and is caused by the horse lying down on the hoof and shoe of the same foot. Many horses do this from habit, the same as horses will crib, or, as they are called, wind suckers. For wind suckers there is no remedy that I have ever found. For shoe balls I blister, and make the lump or callus sore, so that the horse will take his hoof away, for it will hurt him, and the blister will remove the lump; then apply any salve to heal up the blister, take off the heels of the shoe, and in this way you will cure the horse and break him of this bad habit.

FOR BREAKING OF BAD HABITS.

The Blinders Prevent Seeing Plainly.—It must be remembered that the blinders in general use to cover up the eyes so as to make it impossible to see things plainly sideways, and wholly so from behind, must tend to this result; and certainly we are convinced of this, when we see that to overcome the animal's fear of any object, the first and most obvious point is to induce an understanding of its appearance and character. Blinders are admissible only when there is a desire to conceal the defects of a

large head, and to cause a naturally lazy horse to drive steadily, by preventing his ability to see when the whip is about to be applied. But in general terms I would say, never use the blinders—it is undoubtedly wrong.

The Horse must See the Object of Fear from Different Positions.—It is one of the peculiarities of the horse to understand and be reconciled to an object, or cause of excitement, only from the position and circumstances brought to his notice. This seems to be on account of the horse's reasoning powers being so limited as to be unable to retain the same understanding of the object beyond the position from which it is brought to notice.

Every progressive change of position requires almost the same care and patience of that preceding; for example, if in teaching a horse to become regardless of an umbrella, it were shown only from the near side, upon carrying it to the other side it would inspire nearly as much fear as at first from the near side; or there may be aversion to some particular object, or resistance may be inspired only under certain circumstances. You may succeed in getting a colt gentle to be ridden from the near side, but upon attempting to do so from the off side, would, in all probability, be resisted. A gentle horse, upon being hitched to a top buggy for the first time, upon getting a glimpse of the top over the blinders, became so alarmed as to defy all control, kicked clear of the carriage and ran away, was as usual gentle and fearless to an open buggy, but would not bear a top. A fine young stallion, perfectly regardless of a locomotive, and apparently of everything else, was so frightened by the sound and appearance of an engine suddenly from behind, which was a position he had never seen it in before, that he kicked himself clear of the wagon and got away, and would thereafter not only kick in harness upon hearing the least rattle or unusual sound, but would not bear a locomotive. The impulse of fear first induced by the engine prompted the kicking, which brought the feet in contact with the crosspiece of the shafts, which increased his terror, and associating thereby the wagon with the engine, its rattling noise became a cause of equal repugnance as that of the engine or cars.

A high spirited but gentle mare was taken to a smith shop; the smith struck her sharply with his hammer two or three times for not standing or submitting the foot to his satisfaction, which so frightened the mare that she would not bear any one having a leather apron on to go near her, or allow her feet to be handled. Have frequently found instances of horses being gentle single, but vicious and unmanageable double, and gentle double, but not single, etc.

These peculiarities imply the necessity, as experience proves, of forcing an understanding of the object from every side, and in every manner it is usually seen by him in use.

If, for instance, a horse is afraid of an umbrella while in harness, he may be taught to care nothing about it out of harness; but if not taught to feel and understand its character in harness, would be apt to be as much frightened at it in that position as if he knew nothing about it.

This seems to puzzle many well meaning men, and is often the cause of much disappointment.

A horse that is afraid of an umbrella is brought forward to illustrate the management of such habits. In a short time the horse will bear the umbrella over and around him in any manner without seeming to care anything about it. The owner is pleased with the belief that his horse is broken; when in harness at some future time he raises an umbrella behind the animal, and is astonished to find him as bad as ever, and he naturally condemns the instruction as of no account; and, indeed, without reflection, this would seem to be about the truth of the matter.

But when it is seen, in the first place, that it is often necessary to repeat the lesson several times a day, possibly for days, to fix an impression of the harmless character of the object, and in the second place that it is necessary to give the horse the same understanding of the object in harness, that expecting the animal to be broken of the habit by a single direct lesson only tends to defeat success, for without ability to control the horse every attempt to force upon him the ob-

ject of aversion only inspires greater resistance, because taught to a still greater degree to resist control, and a sense of freedom always tends to increase the animal's fear of the object. Now, the efforts of the owner to control the horse directly, in a position of so great disadvantage, may produce exactly this result, and then, in ignorance of the cause of the failure, it is believed impossible to make the horse gentle.

The main point of success in overcoming nervous sensibility is in the tact of preventing the horse from becoming frightened from any cause, and when excited with fear of an object, as circumstances and opportunity will permit, to let him see and understand that it is harmless. Let the object be seen and brought to his notice from different directions, and, above all, the lesson must be repeated day after day, if necessary, so long as the animal shows any fear of the object, otherwise the effort will be useless, and the horse made more unmanageable and timid than before.

The management of old horses of this character is virtually the same as that of colts, the only difference being in the greater restraint necessary to overcome the extreme resistance a great sense of fear may cause. A horse excited with great fear of an object may not only try with all the energy of despair to free himself from restraint and get away, but fight most wickedly. Indeed, I regard a horse feeling extreme fear of an object as being in one sense the most difficult and dangerous we have to encounter. He is likely at any instant to throw all his strength into the contest for freedom, and if held near the object may strike and kick at it with all the recklessness of despair. The control of such should be made as severe as possible by thorough training with the rope halter. Then tie down as tight as possible. The horse will be so disconcerted and disabled by this that he is unable either to wholly concentrate his attention upon the object or resist the severe strain upon the mouth. If an umbrella, robe or anything of the kind is the cause of fear, it can now be brought gently to his notice, and, as he will bear it, against his nose, head, neck and body, as before described.

Should the animal prove to be not only extremely nervous, but vicious, tie the head to the tail, as for balking, etc., and keep the horse moving until resistance becomes impossible, and, while tied, force an understanding of the object, gradually giving freedom, and repeating the lesson as may be necessary. If a top wagon is the cause of fear, get thorough control of the mouth with the rope halter, then gradually work the horse up to the wagon, rattling it, etc. Then lead him into the shafts, and, as he will bear, turning him around and backing him into and pulling the shafts upon him, raise and lower the top, etc., repeating the lesson as may be found necessary. When the horse is attached to the wagon the top should be lowered and the greatest care should be taken to have the harness strong, and every detail of the hitching perfect, and to guard against possible resistance or accident attach a strap to one or each of the fore feet, with the ends carried over the bellyband back to the wagon, and hold it with the reins. Such a horse, it must be remembered, is likely to do his utmost to get away, and as it is not always possible to control by the reins, the advantage of controlling by the feet becomes indispensable. The horse must now be driven and made to submit to control with the top up or down at will, until regardless of it and perfectly manageable.

HOOF LIQUID.

For tender feet, hoof-bound, etc.: Raw linseed oil, or neat's foot oil, one-half pint of either; turpentine, four ounces; oil of tar, six ounces; origanum, three ounces. Shake this well and apply freely once a day on the hoof, inside and outside. Apply at night after having first washed and dried the foot; this for horses that have been lame and contracted long. It is very penetrating and will take out the soreness. Keep the horse at work moderately.

BLACK OIL LINIMENT.

One-half pint spirits of turpentine; one pint raw linseed oil; one-half ounce oil of vitriol; one ounce tincture of hartshorn; one-half ounce oil of wormwood. Put all, except the vitriol, to-

gether; then put the vitriol in, and stir with a pine stick until cool; the vitriol will make it warm. Make it in a stone crock; never put it in tin, or take any inwardly. This I consider one of the best cure-alls ever compounded. I have made and used it for twenty-five years. In 1856 I sold this receipt to a merchant of Cedar Rapids, Iowa, for fifty dollars. I always keep some in the shop, and have sold large quantities of it. In horses, it will cure poll evil when it first comes, and will kill it when it has been neglected until the pipes are formed; it will cure it in six weeks, and leave no scar. I will give directions for its use hereafter. It cures stiff joints, sore shoulders, greasy heels, contracted cords, scratches, galls, cuts, bruises, etc. In the family it is almost indispensable for sprains, cuts, bruises, burns, chapped hands, etc. In salt-rheum, rheumatism or anything else in which you use liniment of any kind, it has never failed.

STIFF SHOULDERS OR SWEENEY.

Produce a counter irritation by making an incision, about five inches from the wethers, down on the shoulder-blade; then take hold of the skin on either side of the incision with the forefinger and thumb of each hand, and draw outward; by so doing the air is forced in. Then rub and force the air all around the shoulder-blade, from top to bottom. Use the black-oil liniment freely, once a day, rubbing hard. Wash with salt and water that will bear up an egg, with a quart of strong vinegar in it. Use this in the morning and liniment in the evening. This will cure any case of long or short standing. Let the horse work moderately.

HOOF-BOUND OR TENDER FEET.

Cause.—Fever in the feet, founder, or gravel, corns, etc.

Symptoms.—The feet are hot, hoof and frog dry, hard and contracted.

Cure.—Take off the old shoe, pare the foot level, or a little the lowest at the toe, but never cut the frog or braces; take a figure five shoe, light at the toe, heavy at the heels, concaved at the toe and sides and convexed at the heels; fit it truly and

nicely; let it rest easily on the heels; put the nails well forward of the quarter and one in the toe; fit the shoe as wide as possible on the balls, and follow the heels around; if the shoe touches at the heels, the convexed heels will force them outward. Use small nails; set the shoe once in every four weeks, and use weak lye and Furlong's Boots.

HOOF-AIL IN SHEEP.

Muriatic acid and butter of antimony, of each two ounces; white vitriol, pulverized, one ounce. Mix; lift the foot up and put a little on the bottom. It need be applied only once or twice a week—as often as they limp. It kills the old hoof and a new one takes its place. Have no fear in using it, it has been well tested.

CRACKED OR GREASY HEELS.

Cause.—Over feeding and want of exercise, or standing in a filthy stable.

Symptoms are well known: A discharge of offensive matter from the frog of the foot, or around the top of the foot; often the frog will come out, and sometimes the whole foot will come off; in that case kill the horse.

Cure.—Clean the foot out thoroughly, by using warm soap-suds; then rinse with vinegar and water, an equal amount of each; then use the black oil liniment once a day. You must wash as well as use the liniment every day. Pare the foot down more than you would to shoe, and weaken the heels; then the foot will spread. While you are curing, keep him on a clean, dry floor for about two weeks, and your horse is well.

SOFT-SOAP SALVE.

Rosin, one-half pound; beeswax, one-half pound; mutton tallow, one-half pound; gum camphor, four ounces; soft-soap, six ounces. Put the first three in a saucepan and dissolve; add the others while cooling; put into a tin can and keep tightly covered.

This is one of the best salves for the human family in use. For pains, swellings of all kinds, broken breasts, or before the

breast breaks, in scattering the swelling, it is invaluable; also in swollen or caked udders on cows. Wash the udder and apply the salve three or four times, and the swelling will all disappear. Also, for cuts, burns, etc., upon children, it is extremely useful. Make and use it, and you will be convinced.

GREEN MOUNTAIN SALVE.

To make: Rosin, two and a half pounds; Burgundy pitch, mutton tallow, beeswax, of each, two ounces; oil of hemlock, balsam of fir, oil of origanum, oil of red cedar and Venice turpentine, of each, one-half ounce; oil of wormwood, one-half ounce; verdigris, finely pulverized, one ounce. Melt the first articles together and add the oils, having first rubbed the verdigris up with a little of the oils, and put the verdigris in while it is cooling. Take it out, and work as you would molasses-candy, into sticks, and it is ready for use.

MILD GENERAL LINIMENT.

Neat's foot oil, one quart; spirits of turpentine, one pint; aqua ammonia, two ounces; oil of wormwood, one ounce; crude petroleum, half pint. Mix and shake before using.

FRESH WOUNDS.

First stop the blood by tying the arteries or by applying the following wash: four grains of nitrate of silver; one ounce of soft water. Wet the wound with this, then draw the edges together by stitches one inch apart; then wash clean, and if there be any swelling in twenty-four hours, bleed and apply the black oil liniment. Keep the bowels open.

FOUNDER.

Symptoms.—The horse is stiff, his feet are hot, he often trembles, is thirsty.

Cure.—Take off the shoes, pare down the toes, not the heels, until they are near bleeding; then bleed in the toe thoroughly. Let the shoes remain off until the next day, for you may wish to bleed again if he does not get better. Some bleed in other places,

but in all cases of founder the blood settles in the extremities; hence I think that is the proper place to take it from. Then give the following; one half ounce of aloes, four drachms of gamboge, one half ounce oil of sassafras; make this into a pill; give him all the sassafras tea he will drink; bathe his legs well with warm water often, and rub them dry. In two or three days he is well.

HOOF OINTMENT.

Take rosin, four ounces; beeswax, six ounces; lard, one pound; melt together and pour into a pot with three ounces of turpentine, two ounces of verdigris finely powdered, and one pound of tallow; stir until cool. This is to soften and make the hoof grow tough in cases of founder and contracted hoofs.

PHYSIC BALL.

One half ounce aloes, four drachms of gamboge, twenty drops oil of juniper; make into a ball with a few drops of molasses; wrap in a thin paper, and grease it; draw out the tongue with the left hand, place a gag in the mouth, run the ball back until it drops off, give a little water; give the horse a mash before and after.

HOW TO FATTEN THE POOREST HORSE.

Take nitric acid, three drachms; saleratus, two ounces; salt-petre, three ounces; black antimony, three ounces; assafoetida, three ounces; mix, and give one tablespoonful in every mess for two weeks, and your horse is fat, if you give him good care and plenty of good feed. This for jockeying.

RINGBONE, SPAVIN, CURB SPLINT, TOROUGH, PIN OR WIND-GALLS, AND STOCKED ANKLES OR MILK LEG.

Cure.—Oil of origanum, tincture iodine, oil stone, tincture of camphor, spirits turpentine, tincture cantharides, corrosive sublimate, oil of cedar, croton oil, gum euphorbium, of each one ounce; mix with ten ounces hog's lard. Then cut off the hair the size of the lump; use the ointment lightly once a day for three days, then leave off for three days and grease with castor oil, to preserve the roots of the hair, then wash it clean with soap

and water; use as before, and so on, for twenty-four days and your horse will be cured of his lameness and the lumps will be removed, if not united to the general bone.

WHITE OINTMENT.

For rheumatism, sprains, cuts, burns, swellings, bruises, or inflammation of man or beast, chapped hands or lips, black eyes, or any kinds of bruises: Take fresh butter, two pounds; tincture of iodine, one ounce; oil of origanum, two ounces. Mix this well for fifteen minutes and it is fit for use. Apply it every night; rub it in well with the hands; if for the human flesh lay on warm flannel.

LIQUID BLISTER.

Alcohol, one-half pint; turpentine, one-half pint; aqua ammonia, four ounces; oil of origanum, one ounce. Cut off the hair and apply every three hours until it blisters; repeat in eight days; if oftener it will kill the hair.

CONDITION POWDER.

Finagrieke, Powdered,	-	-	-	-	4	Ounces.
Ginger,	"	-	-	-	2	"
Golden Seal,	"	-	-	-	2	"
Assafoetida,	"	-	-	-	2	"
Nitre, pure,	"	-	-	-	4	"
Poplar Bark,	"	-	-	-	4	"

Mix and use as occasion requires. Dose, one tablespoonful three times a day.

TO REMOVE WARTS ON HORSES.

Muriate of ammonia, two drachms; powdered savin, one ounce; lard, twelve ounces. Mix all together, and it is ready for use. Apply daily, and in a little while they will come off.

BIG OR MILK LEG.

This is brought on by a hurt or by a want of action in the absorbent system. It is dropsy of the muscle of the leg.

Cure.—Apply the liquid blister every three or four hours

until it blisters; then, in six hours, grease with soft oil of any kind; in eight days wash the parts clean with warm soap suds and apply it again. Repeat it three or four times, then use the white ointment. If this does not remove it apply the spavin medicine, that will remove it.

. TO KILL LICE ON ANIMALS.

Take four ounces coculous indicus and boil for thirty minutes in two quarts of vinegar, then wash or rub the animal where the lice or nits are, and they will be dead in one hour.

FISTULA OR POLL EVIL.

To cure, before it breaks out, use the black oil liniment freely twice a day, rubbing hard with the hand. After breaking, sponge thoroughly with warm soap suds, then rinse with vinegar and water, equal quantities of each; wipe dry. Then apply the black oil liniment twice a day, and you are sure of a cure, even after the pipes have been formed. There will be no scar.

BLUE OINTMENT.

Take one-half ounce of verdigris, one ounce of blue vitriol, four ounces of rosin, one ounce spirits of turpentine. Grind all fine; mix well with one pound of lard, and it is fit for use. This is good to put on after blistering and on sores generally.

LOCK-JAW.

There is nothing that has baffled the skill of the best doctors, both for dumb brutes and for humans, than the curing of this disease.

The following I got from Dr. Menso White, of Cherry Valley, New York, over thirty years since, and it has never failed where it has been thoroughly tried. The cause is, generally, taking cold in a wound. The first thing to do is to bleed, until the patient shows signs of weakness and the limbs relax. Then find the wound and wash with warm soap suds; take strong plug tobacco and steep in hot water; make a poultice of this, bind it on the wound, and wet the poultice and bandage, and keep it warm and wet. You cannot get too much on it. Then take

some dry smoking tobacco, put it in a pan, set it on the fire, blow it with a hand bellows or a pipe, and hold it under the nostrils. In a short time the jaws will open; then put a gag in. Give two ounces tincture of assafoetida every six hours and a dose of physic. If this will not cure, there is no cure. If there is no wound that you can find, put on a large poultice along the back and loins; cover with two or three blankets, and rub the limbs with strong hot salt and water; bleed and smoke the same. For the human family do the same, only smoke with a clay pipe filled with tobacco; put the bowl in your mouth and blow smoke in the face. The object is to relax the whole system.

SURE CURE FOR PILES.

External Application.—Inner bark of white oak tree. Boil and strain, and boil again until you get half pint of the extract very thick; then add half pint of the oil of oldest and strongest bacon you can procure; simmer together till a union takes place when cold; then apply by the finger up the rectum every night until well. Be very strict to abstain from strong and stimulating diet. The above is a sure cure for blind or bleeding piles, in all cases, sooner or later.

SPLINT AND SPAVIN LINIMENT.

Take a large-mouthed bottle and put into it: oil of origanum, six ounces; gum camphor, two ounces; mercurial ointment, two ounces; iodine ointment, one ounce. Melt by putting the bottle into a kettle of hot water. Apply it to bone spavin or splint twice daily for four or five days; the lameness will trouble you no more. Try this; this alone is worth twice the price of the book.

LOVE DROPS, TO MAKE A HORSE LIKE YOU.

Take the horse castor or wart that grows on the inside of the leg; grate fine; give him a little on loaf sugar, apple or potato; or take the oil of cumin in a small phial; put a few drops on your hand and get a little on his nose or tongue; or use the oil of rhodium in the same way. Keep all these separate in air-tight bottles; never use more than eight drops at a time. Put a little

of the oil of cumin on your hands and go on the windward side of your horse in the field, and he will allow you to catch and halter him.

PHYSIC FOR CATTLE.

Barbadoes aloes, two drachms; tartrate of potassa, one-half drachm; ginger and castile soap, each one drachm; oil of anise or peppermint ten drops; glauber salts, eight ounces. Dissolve all in gruel, one quart, and give as a drench. For horses give double the quantity of all the above, except the salts. Make into a ball. Before giving a horse physic, give scalded bran mash, instead of corn or oats, for two days at least; give water that has had the chill taken off, and continue this food and drink during the operation. If it should not operate within forty-eight hours, repeat half the dose.

DISTEMPER.

To Distinguish and Cure.—If it is thought that a horse has the distemper, and you don't feel certain, knead up bran with weak lye; if not too strong, he will eat freely of it. If he has the distemper a free discharge from the nostrils and a consequent cure will be the result if continued for a few days; but if only a cold, with swelling of the glands, no change will be discovered.

TO RESTORE LOSS OF APPETITE IN HORSES AND CATTLE.

Take four quarts finely pulverized charcoal; one-half pound saltpeter, and one pound of sulphur. Mix and give two tablespoonfuls in cut feed every morning until restored to health.

ANOTHER.

One ounce tincture of nux vomica, one ounce tincture of gentian. Dose, two drachms in two ounces of water. Give with a syringe in the mouth three times a day with soft food.

PINE TAR.

A Short Chapter on Tar; Its Use.—It is something that every man that owns a horse should keep in the stable. Why? Because it is good for cracks, cuts, bruises, etc., and is one of the best of things to put in the summer on horses' hoofs, together

with a little hot tallow. It causes them to grow, and to grow tough and smooth. In the case of sores, it covers them and keeps out the cold and dirt, and is in itself very healing. Get some. Every blacksmith should keep it in the shop and put it on cracked hoofs hot; also on sore and contracted heels, mixing with a little tallow.

TO TAKE OFF WARTS ON PERSONS.

Take one-fourth ounce sal ammoniac; one ounce of rain-water; dissolve and it is ready for use. Wet the wart often and it will disappear in a few days, and without pain. Never cut warts.

FOR SORE EYES.

Sugar of lead, one-half ounce; loaf-sugar, one ounce; fine salt, one ounce; soft water, one pint. Mix and shake well before using. Wash the eye well all around, and be sure you get some in the eye. This has cured bad cases. This is good also for the human family

ANOTHER EYE WASH.

Sugar of lead, sulphate of zinc, blue vitriol, alum and salt, of each one drachm, two ounces epsom salts; put all in one quart of soft water, and wash the eyes twice a day until cured. This is very good for man or beast.

EYE SALVE.

Take one nutmeg and grate it very fine; mix with one large tablespoonful of hog's lard, and grease in the hollow above the eyes twice a day; this will clear them up in ten or twelve days.

LUNG FEVER.

Symptoms.—The horse is taken with a chill, then breaks out in a cold, clammy sweat, holds down his head, never offers to lie down; stands wide in front; groans when he is made to move; his legs and ears are deadly cold, caused by letting him stand in some cold place, or giving him too much cold water when warm. To cure, first ascertain the stage of the pulse, which beats from thirty-six to forty-two per minute in a sound horse; bleed till his pulse becomes natural; then blister around the breast and

chest with the liquid blister; then take tincture aconite, spirits of niter and laudanum, of each one ounce; add to it one gallon of spring water; let him drink one pint of it every two hours; rub and foment his legs with alcohol, camphor and red pepper till they get warm; give him water to drink that slippery-elm bark has been boiled in, or hay tea with plenty of gum arabic in; let that be his constant drink. Feed moist food; open his bowels moderately with salts and linseed oil; never give aloes in case of lung fever. Keep on with the above, and your horse will be cured if taken in time.

DISEASE OF LIVER, OR YELLOW WATER.

Symptoms.—The eyes run and turn yellow; the bars of the mouth the same; the hair and mane get loose, and he often gets lame in the right shoulder, and very costive.

Cure.—Give the following ball every morning, until it operates on the bowels: Take seven drachms of aloes; one drachm of calomel; four drachms of ginger; and molasses enough to make it into a ball; wrap it in paper and give it; give scalded bran and oats—grass, if it can be gotten. When his bowels have moved, stop the physic, and give him one ounce of spirits of camphor in a pint of water every morning for twelve days; rowel in the breast, and give a few doses of cathartic powder. Turn him out.

WORMS.

Symptoms.—The horse eats, but will not thrive; his belly gets big; his hair strays.

Cure.—Give one quart of strong tea, made of wormwood, at night; the next day give seven drachms of calomel; make it into a ball and give it; give no cold water for forty-eight hours, but make it milk warm; give him two or three bran mashes and some of the cathartic powder; if he shows any more symptoms, repeat the dose in three weeks. This will never fail.

INFLAMMATION OF THE BOWELS.

Cause.—Large quantities of water when overheated; sudden change from warm to cold atmosphere; plunging the horse, when

hot, into cold water; high fed horses are more subject to this disease.

Remedies.—Bleed one half gallon from the neck, and give the following: Gruel, two pints; prepared chalk, one ounce; catechu, four ounces; opium, three scruples. The above should be repeated every six hours until the purging ceases. The horse must be kept clothed and well rubbed. If there is much tenderness in the bowels, by the pressure of the hands, it will be proper to apply the liquid blisters over the bowels.

LAMPERS.

All young horses are liable to this trouble. It is nothing but inflammation of the gums.

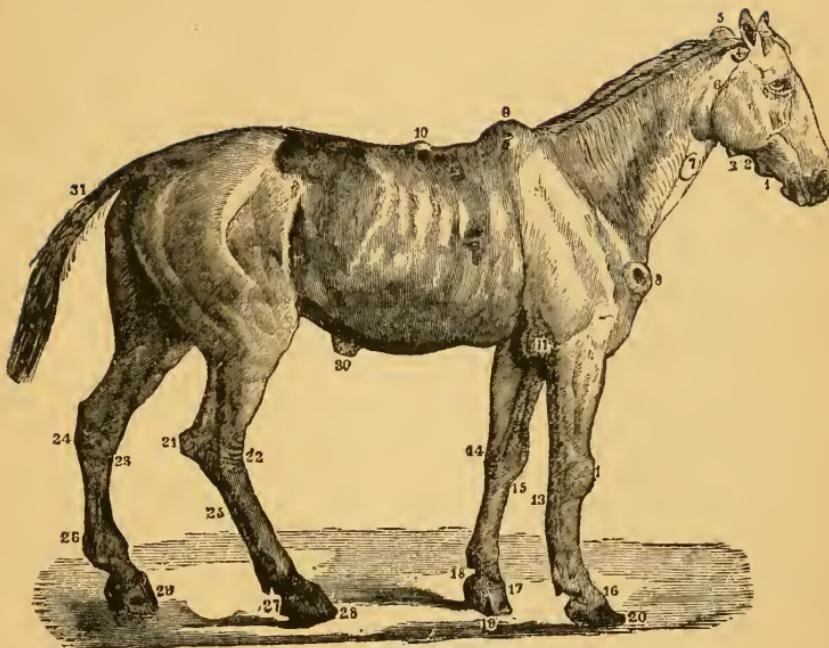
Cure.—Bleed or scarify the gums; never burn, for it spoils the teeth and adds to the cause of the disease. Give a bran mash, rub the gums with salt, give the cleansing powders.

HOW TO MAKE THE MAGIC LINIMENT.

Oil of spike, two ounces; one ounce oil of origanum; two ounces spirits of turpentine; three ounces sweet oil; two ounces spirits of wine; one half ounce tincture of Spanish fly; one ounce spirits of hartshorn. Put in a bottle and shake and apply to all strains, sprains and bruises.

FOR CLEANSING THE BLOOD OF THE HORSE.

Bleed the horse through the nostrils, after which use the following purgative: Ball of barbadoes aloes, six drachms; of pulverized ginger, two drachms; of pulverized gentian root, one drachm. Twenty-four hours after give one of the following powders twice a day, in his mess: Black antimony, one ounce; saltpetre, one and one-half ounces; flour of sulphur, two ounces. Mix and divide into eight powders.



DISEASES OF THE HORSE.

1. Caries of the lower jaw.
2. Fistula of the parotid duct.
3. Bony excrecence or exostosis of the lower jaw.
4. Swelling by pressure of the bridle.
5. Poll-evil.
6. Inflamed parotid gland.
7. Inflamed jugular vein.
8. Fnngus tumor, produced by pressure of the collar.
9. Fistula in the withers.
10. Saddle-gall.
11. Tumor of the elbow.
12. Induration of the knee.
13. Clap of the back sinews.
14. Malanders.
15. Splint.
16. Ring-bone.
17. A tread upon the coronet.
18. Quittor.
19. Sandcrack.
20. Contracted or ring foot of a foun-dered horse.
21. Capped hock.
22. Malanders.
23. Spavin.
24. Curb.
25. Swelled sinews.
26. Thick leg.
27. Grease.
28. A crack in front of the foot, called cow-crack.
29. Quarter-crack.
30. Ventral hernia.
31. Rat-tail.

TURKISH LINIMENT.

Oil of Pennyroyal,	-	-	-	-	-	-	1 Ounce.
" Red Cedar,	-	-	-	-	-	-	1 "
Camhor Gum,	-	-	-	-	-	-	$\frac{1}{2}$ "
Barbadoes Tar,	-	-	-	-	-	-	$\frac{1}{2}$ "
Tincture of Lobelia,	-	-	-	-	-	-	4 "

Mix, shake and use, and rub hard on all lameness. This is the *Boss*.

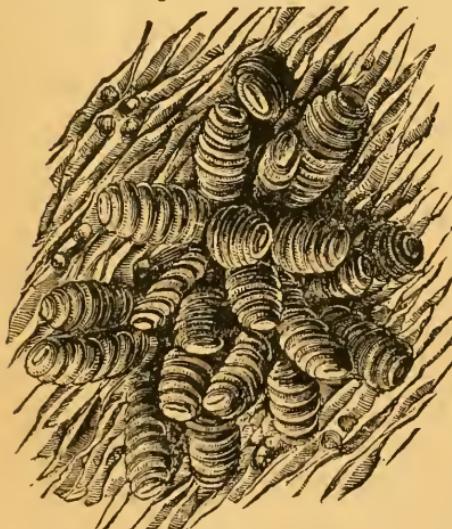
COLIC.

Cure.—Tinc. opium, $\frac{1}{2}$ oz., tinc. assafoetida, 1 oz., spirits of camphor, $\frac{1}{2}$ dr., sulphuric ether, 1 oz., tinc. cyan, 2 drs., sweet spirits nitre, 1 oz., raw linseed oil, $1\frac{1}{2}$ pint. Give all at a dose, as a drench.

Symptoms.—The horse lies down and gets up often, and looks at his flanks; his ears and legs are cold.

Cause.—Too much cold water and change of feed, and over quantity of acid in the stomach.

Cure.—Take laudanum, one-half ounce; sulphuric either, one ounce; one pint water milk warm. Drench, and if not better in forty or fifty minutes, bleed and repeat the drench. Do not allow the horse to be moved while sick.



GROUP OF BOTTS ATTACHED TO THE STOMACH.

BOTTS.

The bot has been a mystery until of late years, with the best men that ever wrote upon the horse. I am asked almost daily by horsemen or farmers: "Is a colt folded with botts; or is it necessary for a horse to have botts?" Certainly it is necessary for a

horse to have bots, and he could not live very long without them. They are a part of the horse. They aid and assist the digestion of the food in the stomach. A colt is foaled with a certain quantity of red bots, which adhere to the coating of the stomach and which are natural for a horse to have to preserve health. They never let go to take hold of any strong poisonous or sweet medicine you may pour down his throat. They live upon the gastric juices and mucus of the stomach, and are a substitute for the gall-bladder upon a horse's liver—a horse having no gall-bladder upon his liver as other animals have. But a horse has a gall duct through the center of his liver, which serves to convey the gall-bile to the intestines to assist the digestion of the food. But there is another bot that originates from a species of gad-fly that you see in the fall of the year busily engaged depositing their nits upon the legs, shoulders and under jaws of the horse. While rubbing their jaws about the trough, or rubbing their legs with their teeth, they get those nits in their mouth and among their food, and they are conveyed with the food to the stomach, and there hatched out, and adhere to the inner coating of the stomach. This is a yellow bot which forms an internal army that is always contriving a plan to destroy the horse. Yellow bots will certainly kill a horse in three ways: the horse will get an over-quantity of them, and they will get up in the cardiac orifice, produce a stoppage, and choke the horse to death; then again they will get down in the pyloric orifice, produce a stoppage, and the horse is perhaps taken with flatulent colic, and they kill him in that way; then again they may perforate the stomach and kill him in that way. But they have always got something to contend with before they will injure the animal. A sound horse is never injured by a bot as long as he eats his food regularly three times a day. His stomach is sweet, and his whole system in good order; they have then plenty of food to live upon without injuring the horse. But the horse has the smallest stomach of any animal of his size living, consequently the food is not long detained in the stomach, but is converted into chyme, passes through the pyloric orifice, enters the duodenum; there it receives the secretion of the excretory duct

of the pancreas, the gall-bile from the liver, and is converted into chyle, passes off into the small and large intestines, and is principally digested there. Therefore, if you hitch up your horse in the morning and work him hard all day long, and omit feeding him at noon (when he is regularly accustomed to having his food three times a day), or in the afternoon, or toward evening, his stomach becomes very empty, and those bots are liable to let go at any moment and go to work upon the inner coating of the stomach. Then again there may be some disease approaching or gnawing upon the animal's system. He loses his appetite and eats but little; you begin to wonder what is the matter with your horse. Just as soon as he loses his appetite, his stomach becomes sour, and then we call it a diseased stomach; and the bots are again liable to let go at any moment and go to work on the coating of the stomach. Just as soon as the disease threatens the life of the horse it also threatens the life of the bot, and they will try to make their escape out of the stomach as best they can.

You may take Youatt with Prof. Spooner's notes, Dr. Bracken's, Bartlett's, Magee's or Stewart's works, and they are all wild upon the bot. They will tell you that a bot never perforated, or in other words, eat through a horse's stomach whilst he lived, and they thus show that they know nothing about it, for while practicing in the army and while traveling through the States, I have seen horses that died with bots that had eaten entirely through the stomach and its contents also, within ten minutes after the death of the horse; and this goes to show that they will certainly eat through the stomach whilst he lives.

Now, we have tried almost all the strong and poisonous medicines imaginable to kill the bot, such as nitric acid, sulphuric acid, muriatic acid, strong elixir vitriol, a strong decoction of pink root, strychnine, arsenic, turpentine, alcohol and all those medicines commonly fatal to vermin, and they will actually live in any of those medicines from one to twenty-four hours, which goes to show that you may pour all the strong medicine down a horse that you please, and you will kill the horse instead of the bots. But now we have a vegetable that every farmer grows

upon his farm every year, the juice of which will kill a bot in ten seconds, where nitric acid will not kill them in twenty-four hours; not because it is strong or poisonous, but it is a well-known fact that when farmers or stock-owners get sick horses they will send off for the best horse doctor (so called) that they have in the country. He comes and examines the animal; he is perhaps not thoroughly posted in anatomy and physiology, or in the different symptoms of the different diseases that the horse is subject to, and he is unable to tell exactly what is the matter with the patient; but he knows enough to know that there is something wrong, and about the first thing that he will tell you is that he has got the bots. Certainly he has the bots, but the question is, are the bots afflicting the animal at the time? I will teach any boy fourteen years old, who may enter my class, so that he can always tell when the bots are at their destructive work, and when a man knows exactly what is the matter with his horse, he can always form some opinion what to give to cure. But this man may tell you that your horse has the bots, and he is going to kill them; and he will drench him with strong dose after strong dose of medicine, and still the horse is perhaps getting worse all the time. When he has given him all he knows, some one else in the crowd knows of a cure, and they will give him that, and still they have no relief. Perhaps some one else will say: "That horse acts just as mine or my neighbor's horse some time ago, and we gave him so and so and it cured him," and they will also give him that. After a while they will have ten or a dozen strong doses of medicine poured down his throat, and make, as it were, a drug-store out of his stomach; and eventually the medicine kills the horse, instead of the disease. Hundreds and thousands of horses are killed yearly by overdoses of strong medicine administered by men that don't understand the properties of medicine, or do-'t understand their business. Whether it be a veterinary surgeon or a physician who administers a dose of medicine to his patient, he should be able to tell what effect it will produce upon the patient, or he should not administer the medicine.

Now I can give you several prescriptions that will afford temporary relief for the bots when you find your horse is plagued with them. If you will bleed him in the mouth, or take one quart of blood from the neck vein, and give as a drench, sometimes that will give the horse relief; then again you can give him sweet milk and molasses; half an hour after you will give him strong boiled sage tea or alum water; half an hour after you will give him a physic; the milk and molasses will cause the bots to let go; the sage tea or alum water will shrivel them up; they will lie in a dead or dormant state, and the physic will carry them off. Then, again, you can turn up his upper lip, rub it with spirits of turpentine, rub his breast and chest with turpentine, and you may get relief through or by any of those operations in from fifteen to twenty-five minutes; but it is only temporary relief—those bots still remain in the stomach to take hold at any time that there is a disease gnawing upon his system or that he has an empty stomach. But the beauty of the vegetable juice is that you have it in your house the year round; when you find that the bots are working upon your horse, go and get one quart of the juice and give it as a drench, and as soon as it gets to the stomach the bots will let go and suck themselves as full as ticks, and the gas that is in the vegetable juice will actually burst them in the stomach. That is the only medicine which we have found in the experiments that we have ever tried, that will kill the bots in a horse's stomach without injury to the horse. Next day you will see them pass off with the evacuation of the bowels, not the bot, but the outside skin or shell of the bot; then your horse will not be plagued with them again until the next season, when those gad-flies will come back and deposit their nits in the same places above mentioned; they are again taken with the food to the stomach, hatch out and remain there till the next summer; then their time has come, they will let go their hold, pass off with the evacuation of the bowels, get in the earth or manure piles, go through some kind of transformation similar to the silkworm; there they lie in a dead or dormant state from three

to five weeks, then they burst their horny shell like a locust, and come out in that same gad-fly again, and deposit their nits in the same places as above stated. Thus those unnecessary yellow bots that destroy so many valuable horses originate from generation to generation. You can prevent those bots by rubbing the nits in the fall of the year with spirits of turpentine two or three times; it kills them and they drop off. If you will shove them off in the palm of your hand, spit upon them, put the palms of your hands together for two minutes, you will have them hatched. If you will take a live bot from the stomach of a horse that has died or been killed, and put him into a phial, put a cork in, giving him a little air by cutting a bit out of the cork, then tie a string to the phial and hang it in a warm room, in twelve or fifteen days it will come out a perfect gad-fly and creep around in the phial; in that way you can all see where they originate from.

THE TRUE SYMPTOMS OF THE BOT.

When the horse is taken with the bots, while in the team, you will frequently see him paw first with one foot then with the other, whisk his tail down between his legs; he will become uneasy, shifting around from one position to another; if you unhitch him he will lie down, roll over and over; sometimes he will lie on his side and put the muscle of his nose around to his side, and give signs of pain; frequently he will turn up his upper lip; if you will examine his upper lip, you will find the true representation of the mouth of the bot; you will find little pimples upon the inner surface of the lip, which, in a sound horse, or any other disease, are perfectly white; but when the horse is plagued with bots they will turn to a purple red and become enlarged. By those symptoms you will know that it is the bots; then to cure, you will get one quart of the vegetable juice above mentioned, which is common potato juice, obtained by grating them fine or mashing them as best you can, and press out the juice and drench the horse. This will cure any case in twenty-five minutes, unless they have eaten entirely through the stomach.

POLL EVIL.

Among all the evils in this world, poll evil is the greatest evil. It is brought on by a bruise or a stroke of some kind, which produces fever or inflammation of the muscles of the poll of the neck; in first stages you will find an enlargement sometimes on one side and sometimes on both sides of the neck, with fever or inflammation. In its first stages, all that is necessary is to bathe the enlargement twice a day with any of the liniments that you find in this work, and in a few days you will scatter the swelling and draw all the inflammation out, and your horse will be cured; but if you neglect and let it run on too long, there will eventually grow roots, core or pipes in the enlargement. It has been calculated by the best of authors, until of late years, to be incurable without stiffening the neck, because they would put strong or poisonous medicine in the orifice or tumor upon the neck, such as corrosive sublimate. Arsenic or acids eat down and injure the ligaments of the joint, and the result is a stiff neck; but we have tried experiments upon that disease until we now have a cure that will never fail. We first secure the horse against danger to ourselves by putting a twitch upon his upper lip and strapping up by one fore-leg; then we take a six-inch seton needle, thread it with a tape, one-half inch wide, then we run a seton through from the bottom of the enlargement to the top, draw the tape through and tie it; then make the following lotion: take muriate of ammonia, two ounces; spirits of turpentine, six ounces; four ounces linseed oil; one ounce oil of tar; one ounce corrosive sublimate; one ounce oil origanum; tincture of iodine, one ounce; one ounce croton oil; shake all well together, and anoint the tapes twice a day and draw them through back and forth every time you apply the medicine, and so keep on as long as it runs a thick yellow matter; but as soon as it runs a thin bloody matter, and the enlargement is all gone down, then you will cut the tape, draw it out, and keep the parts washed clean with castile soap and warm water, and use the magic liniment until it is all healed, and your horse will be cured sound.

without spot or blemish, and without a stiff neck. Keep the parts washed clean every day or two while using the medicine, which will hasten the cure and keep the hair from dropping out; also use the cleansing powder as directed, to cleanse his blood and system thoroughly.

FISTULA.

This disease is one and the same as poll evil, only a different location gives it a different name. What will cure one will cure the other. Follow strictly the directions of the poll evil receipt, and you will never fail to cure the fistula, unless it has passed down between the shoulder-blade and the ribs; then it is too deeply seated to apply any medicine to the seat of the disease; consequently it is then incurable, and your horse will be well sold at five dollars.

FOR WIND GALLS.

One-half ounce oil of origanum, one-half ounce spirits of turpentine, one ounce camphorated spirits. Mix and apply with tow or cotton, and cover with sheet lead, as large as the puff, and bind lightly on. Remove once a day, moisten the tow or cotton, and put back. At the commencement this will remove wind galls in a short time. If they have been on long it takes longer, but in time it will take them off. Let the bandage remain on; it will not hurt the horse to travel.

DISEASES OF THE URINARY ORGANS.

Inflammation of the Kidneys—Special Symptoms.—Roached back and tenderness of the loins, staggering and straggling gait, attempts to urinate without being able to do so.

Treatment—Stimulating Liniment.—Use black oil liniment to the loins, together with hot rags or sheep skins. Give sweet spirits nitre, one ounce; spirits camphor, one-half ounce; raw linseed oil, four ounces; castor oil, four ounces. Put all together and give as a drench. This will move the bowels as well as the urine, and carry off inflammation. If it does not operate in one hour, repeat the dose. Examine the sheath and the end of the penis and see if he is foul, or a bean on the end of the penis. If

anything is wrong, wash out the sheath and penis with warm soap soads and grease with lard. Give bran-mash gruel and vegetables.

ANOTHER.

For the Urine.—First cleanse the sheath and penis with warm soap-suds, and rinse out with cold water. Grease thoroughly with lard, then take nitrate of potash, one ounce; acetate of potash, one ounce. Mix and dissolve in pint of warm water. Give one-half with syringe or drench every two or three hours with the rest.

BLOODY URINE.

It is generally the result of a rupture or some of the small blood-vessels of the kidneys, induced by straining, etc. Avoid everything that will provoke or increase urine.

Give acetate of lead, two drachms, in ball or aromatic sulphuric acid; one drachm in drinking water twice daily for a few days, and apply cold water cloths to the loins, moistened freely with pure tincture of arnica.

THE THRUSH.

This is a discharge of offensive matter from the clift of the frog. It is inflammation of the lower surface of the sensible frog, and during which pus is secreted, together with, or instead of, horn. When the frog is in its sound state the cleft sinks but a little way into it, but when it becomes contracted, or otherwise diseased, it extends in length, and penetrates even to the sensible horn within, and through this unnaturally deepened fissure the thrushy discharge proceeds. The immediate cause of thrush is moisture. This should never be forgotten, for it will lead a great many toward the proper treatment of the disease if the feet are habitually covered with any moist application. His standing on his own dung is a fair example. Thrush will inevitably appear. It is caused by anything that interferes with the healthy structure and action of the frog. We find it in the hind feet oftener, and worse than the fore, because in our stable management the hind feet are too much exposed to the pernicious effects of the

dung, and the urine moistening, or, as it were, irritating them. In the fore feet, thrushes are usually connected with contraction. The pressure on the frog from wiring-in of the heels will produce pain and inflammation, and the inflammation, by the increased heat and suspended functions of the part, will dispose to contraction. Horses of all ages, and in almost all situations, are subject to thrush. The unshod colt is frequently thus diseased. Thrushes are not always accompanied by lameness. In a great many cases the appearances of the foot is scarcely, or not at all, altered, and the disease can only be detected by close examination, or the peculiar smell of the discharge, the frog not appearing to be rendered in the slightest degree tender by it, and, therefore, the horse may not be considered by many as unsound. The progress of a neglected thrush, although sometimes slow, is sure. The frog begins to contract in size; it becomes rough, ragged, brittle and tender; the discharge is more copious and more offensive, the horn gradually disappears; a mass of hardened mucous usurps its place; this easily peels off, and the sensible frog remains exposed; the horse cannot bear it to be touched; fungus granulations spring from it; they spread around, the sole becomes underrun, and canker starts over the greater part of the foot. The disease can scarcely be attacked too soon, or subdued too rapidly, and especially when it steals on so insidiously, and has such fatal consequences in its train. I have seen the whole hoof come off in consequence of neglect, and then you might as well kill the horse. There are many receipts to stop a running thrush. Almost every application of an astringent, but not of too caustic nature, will have the effect. Before using anything, wash the frog and foot well with soap suds, and scrape all offensive matter out; cut off all small tags of frog and wipe dry, and after this keep the foot out of any kind of moisture, unless you should soak the foot in a strong liquid made of equal parts of tobacco and gum catechu. This is good, for it is a very strong astringent, and this will kill the alkali of the soap. Then hold up the foot and drop in the center of the frog, and around the frog, carbolic acid, then coat it over with pine tar. The acid kills the disease, and the tar

will heal it up, and keep out any moisture and dirt. This should be repeated until you effect a cure, which will not be long. The horse should be kept in a clean, dry box-stall, and not, as some do, turn him out, for it needs close attention every day, and kept out of the wet.

COUGH BALL.

Pulverized ipecac, three-quarters of an ounce; gum camphor, two ounces; squils, one-half an ounce. Mix with honey to form into mass; divide into eight balls; give one every morning.

FEVER BALL.

Emetic tartar, one-half an ounce; gum camphor, one-half an ounce; nitre, two ounces. Mix with linseed meal and molasses; make into eight balls; give one twice a day.

LIGHTNING PAIN KILLER

That will beat Perry Davis' or anything else that I have ever seen tried.

Take sulphuric ether, oil of spike, tincture of opium, oil of sassafras, aqua ammonia, British oil, of each one ounce; put all in a bottle and shake well before using. Apply with the hand and rub smartly. This is for all sharp pains, "stitches," sprains or pains of any kind. Use as directed, and if the pain doesn't "git," then my name is not Pitcher.

A SURE CURE FOR THE HEAVES.

Take oil of tar, in one vial, two ounces; sulphuric acid, in another vial, two ounces; drop twelve drops of the oil of tar into a mash, or into oats, at night; drop twelve drops of the sulphuric acid into half a bucket of water, and let him drink it; put one teaspoonful of pulverized rosin into the feed at the same time you do the tar. Use in this way once a day, and when you have used the oil of tar and acid up, your horse is well. Wet the hay or straw, and you can sell him for a sound horse. I would not take one dollar less for a horse because he has the heaves.

CARTHARTIC POWDER.

To clean out horses in the spring, making them look sleek and healthy: Black sulphuret of antimony, two ounces; nitre, two ounces; sulphur, two ounces. Mix well together, and give a tablespoonful every morning.

LINIMENT FOR SPRAINS AND SWELLINGS.

Aqua ammonia, two ounces; spirits camphor, two ounces; oil of origanum, one-half an ounce; laudanum, one-half an ounce. Mix, and use with a great deal of friction.

ANOTHER.

For swellings caused by strains: One-quarter of a pound of saltpetre, one ounce oil of wormwood, one quart strong vinegar. Heat all, and bathe while hot, and bandage tight, then wet the bandages and cover with dry ones, and repeat until the swelling is gone.

DIARRHEA, DYSENTERY, SCOWERS, ETC.

To cure.—Use powdered chalk, one ounce; gum catechu, one ounce; opium, one-half ounce; ginger, one drachm. Rub together with an egg, and add half a pint of gruel, with sulphuric ether, one ounce. Give as the occasion requires.

PURGATIVE CLYSTERS.

Aloes, eight to ten drachms; washing soda, one ounce; common salt, eight ounces. Dissolve in one gallon of warm water. Give until it operates.

LAXATIVE CLYSTERS.

Tepid water, two quarts; epsom salts, six ounces; frequently tepid water and a handful of salt will do. Give according to the circumstances of the case.

PURGATIVES.

Castor oil, eight ounces; croton oil, ten drops. Give as a drench. Repeat if it does not operate in one hour.

LAXATIVE.

Castor oil, four ounces; raw linseed oil, four ounces. Give in gruel.

GORGED STOMACHS.

Tincture capsicum, two drachms in eight ounces warm water every fifteen or twenty minutes until relieved. As soon as relieved, give linseed tea or gruel. Diet for some time.

ANOTHER FOR WORMS.

When the horse eats well and still loses flesh, give three bran mashes, then give three tablespoonfuls of powdered poplar bark in feed once a day for three days, then two the same for three days, then one the same for three days, or until you discover a change and plenty of worms passing.

OINTMENT TO PROMOTE THE GROWTH OF THE HAIR.

Carbolic acid, one ounce; lard, eight ounces; or, iodine, one ounce; lard, four ounces. Mix well and rub on when wanted.

ANOTHER TO MAKE THE HAIR GROW.

Sweet oil, four ounces; coal oil, two ounces. Rub this on where the hair is off.

FOR SADDLE-GALLS.

For these and all other galls, first wash the place with strong, hot salt and water, and wipe dry, then apply the black oil liniment, and rub hard every day until cured.

FOR SWELLINGS AFTER BRUISES.

Use the soft-soap salve freely, and rub it in with the hand, using a great deal of friction, and heat in.

QUITTOR.

This has been described as the result of neglected or bad tread, or an over-reach, but it may be the consequence of any wound in the foot, and in any part of the foot. In the natural

process of ulceration, matter is thrown out from the wound ; it proceeds from the natural healing of the part. The matter which is secreted in wounds of the foot is usually pent up there, and increasing in quantity, and urging its way in every direction it forces the little plates of the coffin-bone from the horny ones, of the crust or the horny sole from the fleshy sole, or eats deeply into the internal parts of the foot ; these pipes, or sinews, run in every direction, and constitute the essence of quittor. The mode of cure consists in the introduction of caustic into the sinews until the same is cleansed ; or, if not very bad, and there are no pipes formed, the burnt alum and sulphate of zinc, mixed equal parts, and put in and around the wound, will do ; then rinse with the cleansing lotion and anoint with the white salve to heal it up.

FOR PROUD FLESH.

Burnt alum, one ounce ; sulphate of zinc, one-quarter ounce. Pulverize and put in and around the sore.

ANOTHER.

Red precipitate, one-half ounce ; burnt alum, two drachms ; or calcined white vitriol and alum.

MANGE, OR OTHER ERUPTIVE SKIN DISEASES.

To cure.—Take carbolic acid, eight ounces, and acetic acid, eight ounces. Mixed and added to one gallon of water, will cure, in one or two dressings at most, the worst cases.

INJURIES, ACCIDENTS TO THE CORNET OF THE HOOF FROM TREADS, CALKS, BRUISES, INTERFERING, ETC.

To cure.—The best thing I have found, if done at once, is pine tar and tallow, equal parts. Put on the wound — this will keep out the air and cold, and will heal. Also, in cases of picking up nails and stubs : Draw out the nail or stub, cleanse the foot with water — not cut as some do — then put in a few drops of muriatic acid to kill the poison ; then coat it over with tar and tallow.

SALVE FOR SCRATCHES, GREASE HEELS, QUITTORS, AND FOUL SORES GENERALLY.

Cosmoline, four ounces; olive oil, one ounce; oxide of zinc, one ounce; carbolic acid, one-half ounce; sugar of lead, two drachms. Mix well together and rub well in the sores, after first cleansing with the cleansing lotion. This you will find valuable.

OINTMENT FOR CLEANSING FOUL ULCERS.

Four ounces beef or mutton suet; six ounces Venice turpentine; two ounces red precipitate. Mix well and it is ready for use. First cleanse the sore with warm soap-suds, rinse, and then apply the ointment.

WHITE SALVE FOR SORES, SCRATCHES, ETC.

Spermaceti ointment, four ounces; Olive oil, one ounce; oxide of zinc, one ounce; sugar of lead, two drachms. Use this on all sores as you would any salve, and rub well in.

CLEANSING LOTION FOR FOUL SORES, GALLS, SCRATCHES.

Alum, four drachms; sulphate of zinc, two scruples; carbolic acid, one ounce; distilled or rain water, one quart. Cleanse the sore with this; use the white salve.

CATARRH OR COMMON COLD.

Symptoms.—General chilliness; staring coat; frequent sneezing and coughing.

To cure.—First, good nursing; then, give one-half drachm ginger, one-half drachm cayenne pepper or one drachm of common pepper in mash; or, spirits of nitre, one ounce; camphor, two drachms; tartar emetic, two drachms in mash. Sore throat generally follows after a bad cold. The throat and glands become sore and enlarged; heavy and difficult breathing; also difficult to swallow.

Treatment.—Good nursing; in slight cases bathe the throat with coal oil, four ounces; sweet oil, four ounces. If this does not do, add a little more coal oil. If necessary, poultice the

throat, winding it with flannel. Steam the nostrils with hot mashes or boiling water and vinegar on hay. For inward medicine use the same as in catarrh and colds. If there is any rattle in the throat, hot breath or high pulse, put bandages on the legs and plenty of blankets on the body. Give clysters, mashes, hay and liniment tea, and mustard applications to the sides and breast, windpipe and throttle. If the extremities remain cold, give two ounces of nitric ether in one-half pint of cold water or gruel. If diarrhoea sets in, stop giving clysters and give one ounce of nitric ether, one ounce of tincture of opium in water or gruel. In a day or two stop giving mash diet, and give good sweet hay and green vegetables. Feed in small quantities, but often. In extreme debility, give two drachms powdered ginger, two drachms of powdered golden seed, three or four times a day, in gruel. As soon as the pulse lowers and fever subsides, then give the following tonic: Two drachms quassia, two drachms canella, one drachm ginger; after a day or two, add to the above one drachm sulphate of iron. Avoid cold draughts, and have a good warm stable and bed.

RHEUMATIC PAINS, CRAMPS, STRING HALT.

Horses have rheumatism as well as man. To cure, you must use the same remedy. To cure, keep the horse in a clean stable, and bathe the legs or any part affected freely twice a day with hot salt and water. Take a barrel, saw off one end and make a soaking tub. Put in two buckets of hot water; then put in salt until it will bear a potato. Put the feet in, take a sponge and bathe clear to the back, and rub hard. Then bathe freely with the black oil liniment as often as you bathe with salt and water, and rub hard with the hand and cover with woolen blankets, which you must heat hot. Let them stay on so as to sweat. Then take two ounces of gum guaiac; put it in half a pint of alcohol to cut it. Then take horse-radish roots and slice them thin, until you have one quart of slices. Put them in a kettle, pour on one gallon of hot water. Then let them stand all day on the stove and simmer, covered tight. Then strain in a jug,

and put in the gum guaiac and alcohol and cork tight, and it is ready for use.

Shake the jug and give one-half pint of this liquid in a bran mash every night for three nights; then every other night until gone. This is for the blood. I use the same for all horses that are foundered, stiff and sore in feet or legs.

When horses' feet are contracted they are more or less sore clear to the top of the shoulders, for the cords running from the shoulder center in the hoof under the coffin and navicular bones. So as to spread the feet and cure the horse of his lameness, I work all the way down to the foot. Put them in the same tub as for rheumatism. You cannot bathe too much for lameness.

RHEUMATISM IN MAN.

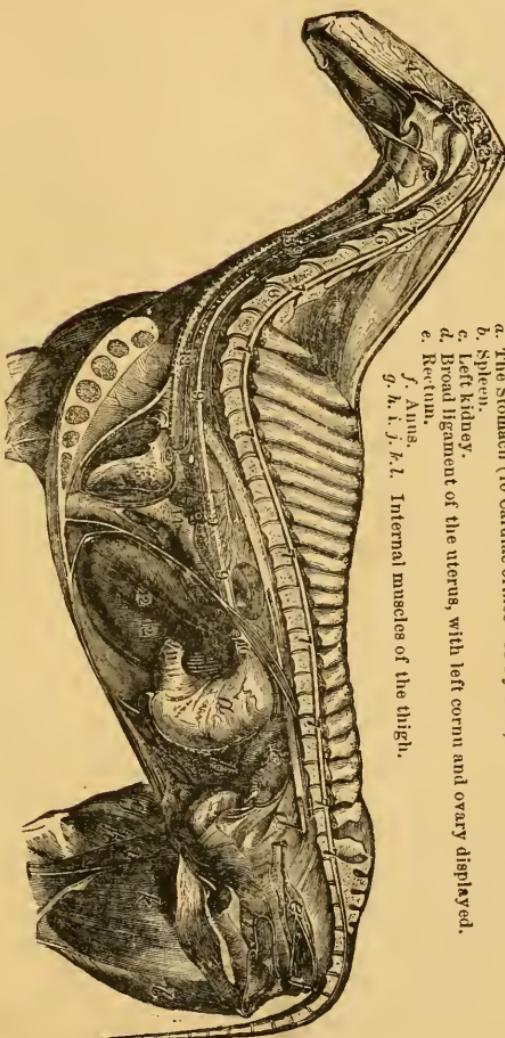
Much has been written and said about this terrible complaint, and all claim they have a sure cure. I have one that I have used on myself and others for years with success. Here let me say, according to my experience you cannot cure rheumatism with an inward or outward application alone. You must work on the blood; and do it in this way: Take one tablespoonful of grated horse-radish, one-quarter ounce of gum guaiac; put this in one quart of good whisky.

Dose.—One tablespoonful of this three times a day before eating. Then rub freely, using a great deal of friction with the hand, and heat in the black oil liniment. Then spread a plaster on thin leather of the green mountain salve. Put this on where the pain is located and let it stay on as long as it will, and rub every day with the black oil liniment. Then take four glass tumblers or dishes and put the legs of your bedstead in them. This is to cut off the electricity from the earth to your body. In bad cases, put the glass under the legs of your chair if you sit in one place long. This is plain, simple and cheap.

Take care of yourself, guard against sudden changes, and I will guarantee a cure.

SECTION OF THE ABDOMEN AND PELVIS WITH THE INTESTINES AND LIVER REMOVED.

- a. The Stomach (10 Cardiac orifice—11 Pylorus).
- b. Spleen.
- c. Left kidney.
- d. Broad ligament of the uterus, with left cornu and ovary displayed.
- e. Rectum.
- f. Anus.
- g. h. i. j. k. l. Internal muscles of the thigh.



LONGITUDINAL SECTION OF THE THORAX, ETC.

- 1. Occiput.
- 5. Tongue.
- 2. Cerebellum.
- 6. Cervical vertebrae.
- 3. Cerebrum.
- 7. 7. 7. Spinal cord.
- 4. Nasal membrane.
- 8. Pharynx.
- 9. 9. 9. Esophagus.
- 10. Cardiac orifice of the stomach passing through the diaphragm.
- 11. Pylorus.
- 12. 12. Posterior surface of the diaphragm.
- 13. Trachea.
- 14. Lung.
- 15. Heart.

THE FOOT.

(To Chapter on Horse-shoeing.)

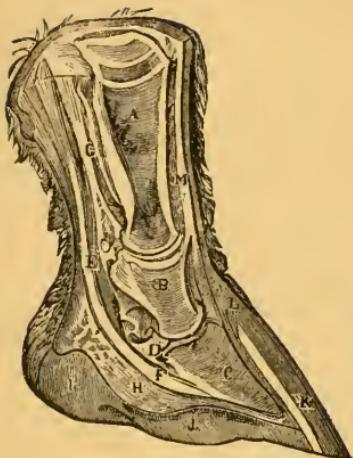


Fig. 12.

Section of the parts entering into the composition of the Foot and the Fetlock and the Pastern joints.

- A. Os suffraginis.
- B. Os coronac.
- C. Os pedis.
- D. Os naviculare.
- E. The perforatus and perforatus tendons.
- F. Inferior sesamoïdal ligament.
- G. Cleft of frog.
- H. Side of frog cleft.
- I. Sole.
- J. Sole.
- K. Rust.
- L. Coronary substance.

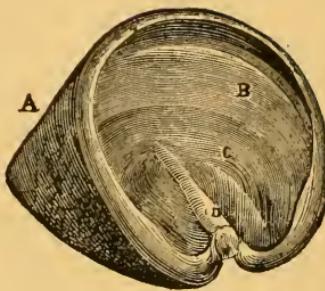


Fig. 12. The Hoof.

- A. Outer surface of crust.
- B. Inner surface of crust.
- C. Upper surface of sole.
- D. Part corresponding with the cleft of the frog.
- E. Coronary band.

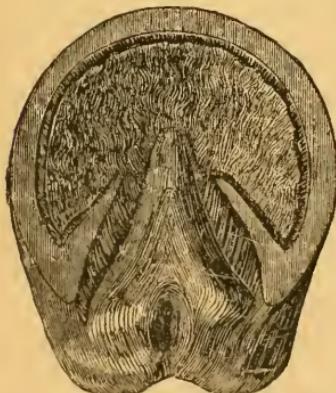


Fig. 14. Right front foot.



Fig. 15. Right Hind Foot.

SHOEING HORSES.

I HAVE already told you how a horse should be broken, and now I will tell you how he should be shod; and I will begin with a short treatise on

CLIPS, AS THEY ARE CALLED.

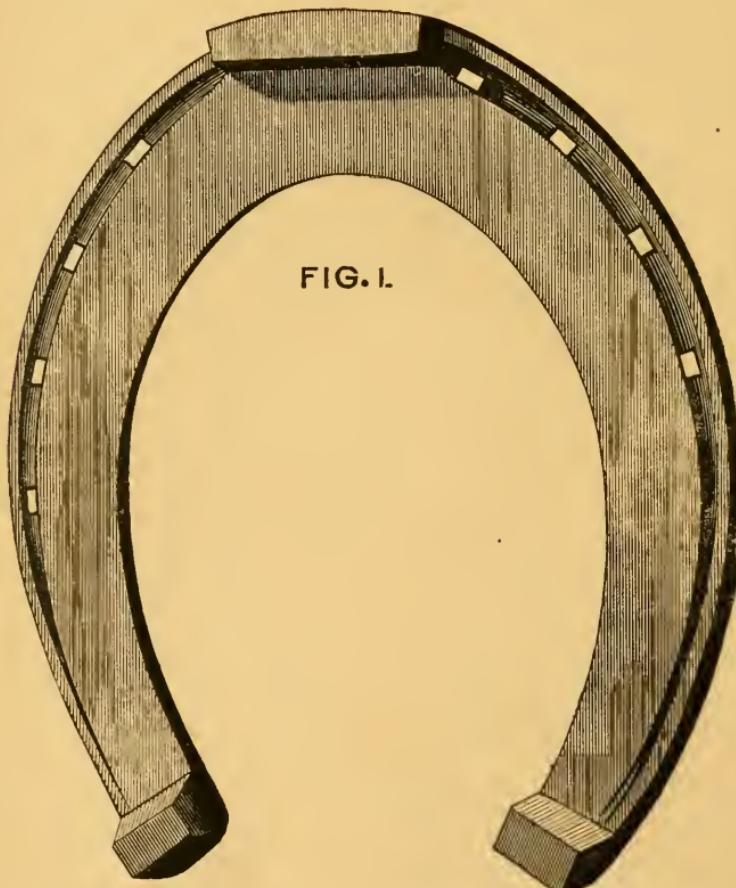
These are sharp points of iron that are forced or drawn from the edge of the shoe on the front, at the toe and on the sides. Never put them on, as they injure the foot, as I will show.

Professor York once said that he wished that he had the power to have a law passed in every State to compel all blacksmiths to put on all shoes with clips, for this reason: that they hold the shoe in place while the smith nails it on, and that they help to hold it on afterward. Now, I will take issue with the so-called Professor York, or any other professor, that the clips are an injury; and if I had the power to pass laws, I would put any smith that would put clips on shoes into the penitentiary until he learned something. Why? Because, as I said before, they are an injury. When you put a clip on a shoe, you are obliged to cut out the shell of the foot where the clip is to go; then it does not fit, and so you heat the shoe and burn it in to make it fit. What is the result? You destroy the shell as far as the clip goes, and more, the shell becomes hard, brittle and dead, because you have burned it. Take your finger nail, cut and burn it, and the effect is the same. What our nails are to us, the horse's hoof is to him. And by this practice, in a short time, you have a center crack or a quarter crack that will, in a little while, run to the top or hair of the foot, and you have it to cure. Again I say, never put on clips.

Fit the shoe properly, use light nails and you will always have your shoes to stay as long as they should for the good of the foot. If a smith does not know enough to put on a shoe without clips, he had better go and learn how to do it.

The horse shoes here represented are those that I have used for years, and they will show you that you cannot shoe all kinds of feet alike.

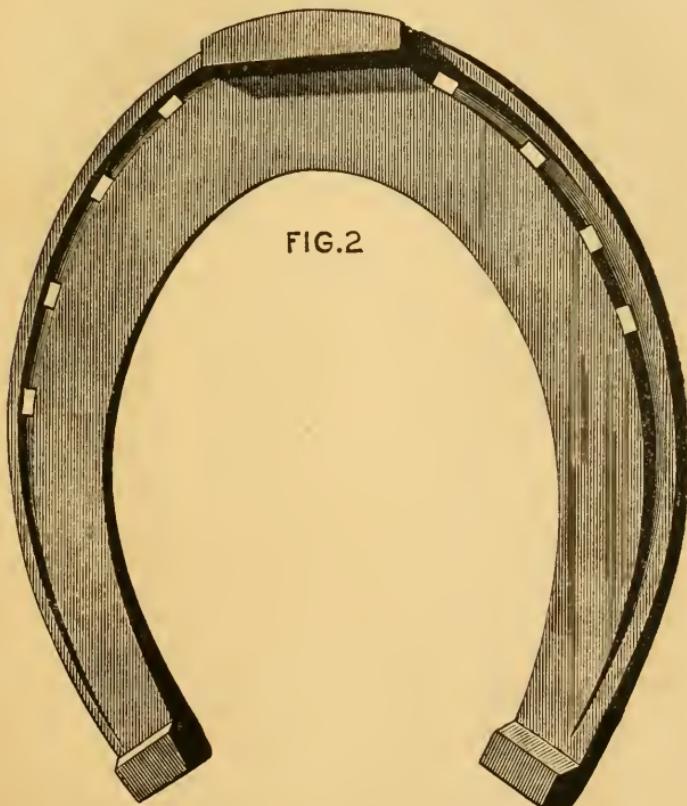
FIG. I.



The first cut represents the heavy draft, with corks. This shoe is designed for horses that have heavy loads to draw on hard roads. The shoe is heavy, with corks half an inch high from the

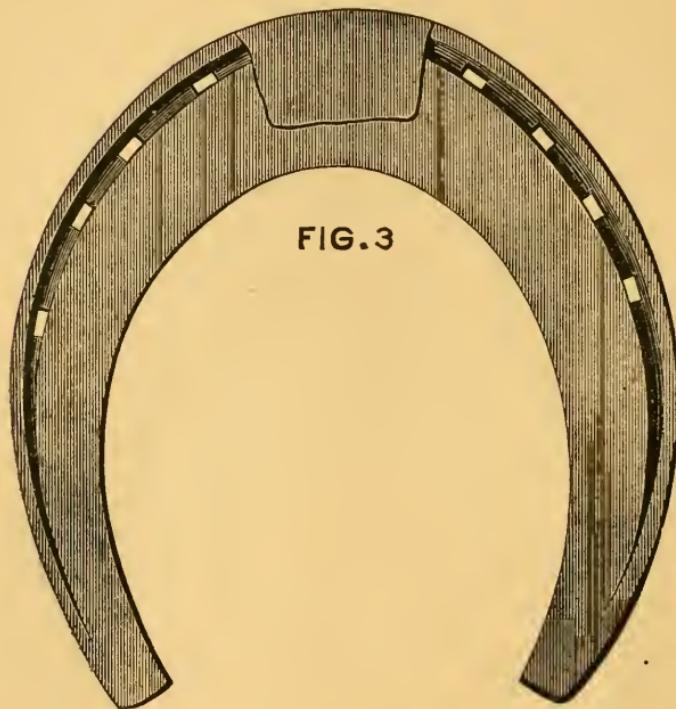
top of the shoe. This is as high as they should ever be for winter or summer. I am no friend to high corks. Just enough to keep the horse from slipping is all that is needed. The shoe is concaved until near the heels, then convexed. And here let me say that all shoes should be somewhat convexed at the heels, so that when they come in contact with the heels, as they become loose, they will press the heels outward, while if they were concaved all the way back, they would press the heels inward. Use light nails, No. 7.

FIG.2



This shoe is designed for light draft or driving; for the buggy. It has corks one-fourth of an inch high, concaved and

convexed heels; make the toe a little the lower; fit nicely to the foot.

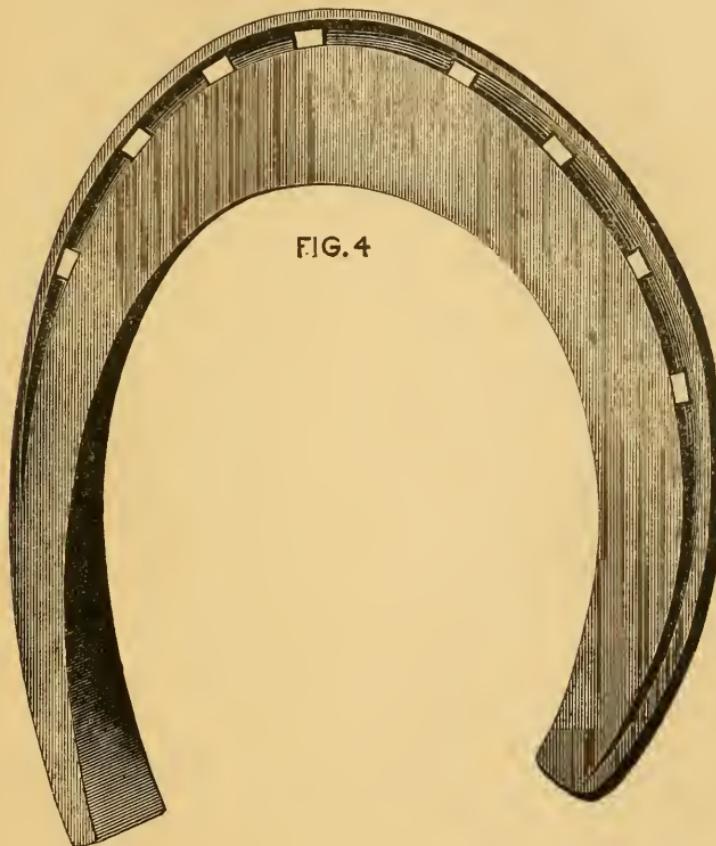


This shoe is designed for the buggy and saddle and light driving. It is a spring heel, with a piece of flat steel welded on the toe to keep it from wearing. It is one of the best shoes for contracted feet in use, because it lets the frog come close to the ground, and if fitted properly with the heels convexed, will soon spread the foot. Use No. 6 Globe nails, and put them well toward the toe, in order to leave the quarters and heels free. Never cut the frog or braces.

Shoe Fig. 4 is designed for horses that interfere or strike the knees and ankles. You will see by its peculiar shape that it is made heavy and thick on the inside, high at the heel, low at the toe and on the outside. Make the shoe like Fig. 4,—a little straighter, perhaps, on the inside; at the front quarter cut

off a little of the shell, for a horse never strikes with the heels. The object of this is to throw the ankles outward, so as to allow the other foot to pass. If this is used and the foot properly dressed, they will never strike. Put the nails around the toe as represented in the cut; use light nails, No. 7.

FIG. 4



Now for the cause of horses interfering. I claim that there are no naturally interfering horses or colts. I think the cause is in letting the toe of the foot grow too long, and the inside get broken off. In that case the foot tips inward, and this throws the ankle inward, and the foot in passing strikes it. Then the animal gets afraid to travel; drags his toes and tries to avoid

hitting; he loses confidence in his feet. Then there are other causes. One says: "My horse never strikes when he is bare-footed. Why can't he be shod so that he will not strike?" Here comes in one of the troubles. You take him to the smith to be shod; he cuts away the heels and lets the toe remain. Why? Because the heel cuts the easier and is nearer to him. He does not look to see whether the foot is level or not. He thinks that he must cut the foot somewhere, or the horse is not shod. He does not look to see if one side of the foot is wider than the other; and if it be so, cut off the side that is the wider until the foot is true, so that the horse will stand up straight, and not on his heels. Neither does he put on the shoe truly and squarely; all of which he should do. It is a good thing to learn when to cut, how much to cut, and when to stop. But says one: "How am I to know when a foot is not true?" I will tell you. Take the frog as a guide—it is the center of the foot—and keep it such, and you will find, I think, that what I say is true. You will never have a horse to strike unless he is very poor, or is driven too hard and gets leg weary, or you try to make him go faster than he is capable of doing. I never have found a horse that I could not stop with two or three shoeings. After that you may come gradually back to a level shoe.

The next evil prevalent in a faulty method of shoeing is that of paring the foot, so as to produce unnecessary length of hoof at the toe. These long toes are of a mechanical disadvantage to the horse; he cannot raise the limb and foot evenly upward and forward; hence describes a sort of curve, and in so doing often strikes the opposite fetlock, and thus, as the saying is, "interferes."

Long toes also tend to produce strain or sprain of the flexor tendons and other parts, and soon the knee bulges out in front on a line with the lengthened toe; then the flexor tendons either shorten, or the annular ligament, at the back part of the knee, contracts, and then we have a genuine case of "sprung knee," an unnecessary disease, a permanent eye-sore, and the animal is ever afterward unsound, unless by the operation of tendinotomy,

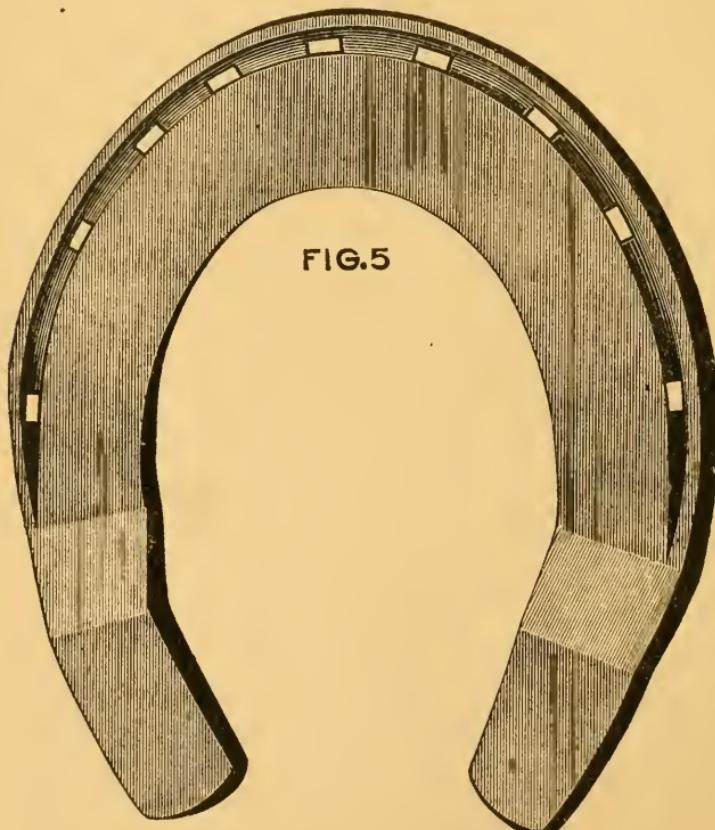
and the feet being put into proper shape by a sensible shoeing smith, the animal is able to perform ordinary horse labor, or, in other words, is able to perform the "ordinary duties of an ordinary horse." Dr. Cuming, a very experienced man in the art of shoeing horses, thus discourses on the evils of lengthy toes:

"Another evil, resulting from the length at which the toes are commonly left, is interfering. The horse, finding the long projection in front of his foot as so much leverage, acting to his disadvantage, gradually gets into the habit of shifting it, by raising himself from one or the other of the quarters. This is still more the case when, in addition to the long toe left on the hoof, a small round knob of steel is set into the point of the shoe, as if in contempt of all that nature teaches. With these absurd contrivances placed between his weight and the ground which supports it, it is next to impossible for a horse to raise himself evenly upward and forward, and hence the number that one way or another interfere. If, in raising his weight from the ground, the pressure be upon the inside quarter of the foot, then the thick part of the pastern is thrown inward, in the way of being struck by the upper edge of the hoof of the other side. If the cant be the other way, and the outside raise the weight, the inside edge of the shoe is thrown round and upward, and he runs the risk of cutting with it the opposite leg. Even when the horse, from having a naturally good gait, escapes both these evils, still he is not free from the trouble caused by this shape of shoe.

"The fore foot of the horse, as nature makes it, has no such projection in front and downward as that which the smiths here give it, but rather the reverse. The sole surface at the toe is commonly broken off and notched back at the middle, so that the pressure, when the foot strikes the ground or the animal is raising his weight, is distributed over the whole front of the foot. In accordance with this, the coffin bone, which fills the internal cavity of the hoof, has the same turned-up and notched-back form. In England, France, and on the continent of Europe generally, wherever veterinary schools exist,

and scientific attention is given to shoeing, this natural form of the foot is more or less followed in the shape of the shoe, and the animal has preserved to him, along with the protection from wear which the shoe gives, the position of tread for which nature has constructed the other mechanical arrangements of his organs of motion. Why it is not so here is perhaps partially due to the too frequent use of the knife in cleaning out the foot when it is shod, as it is impossible with the knife to bring the hoof to the proper shape in all its parts; but it is more due to want of study on the part of those who shoe, of the structure of the foot, its uses and the relation existing between it and the other motive organs."

FIG.5



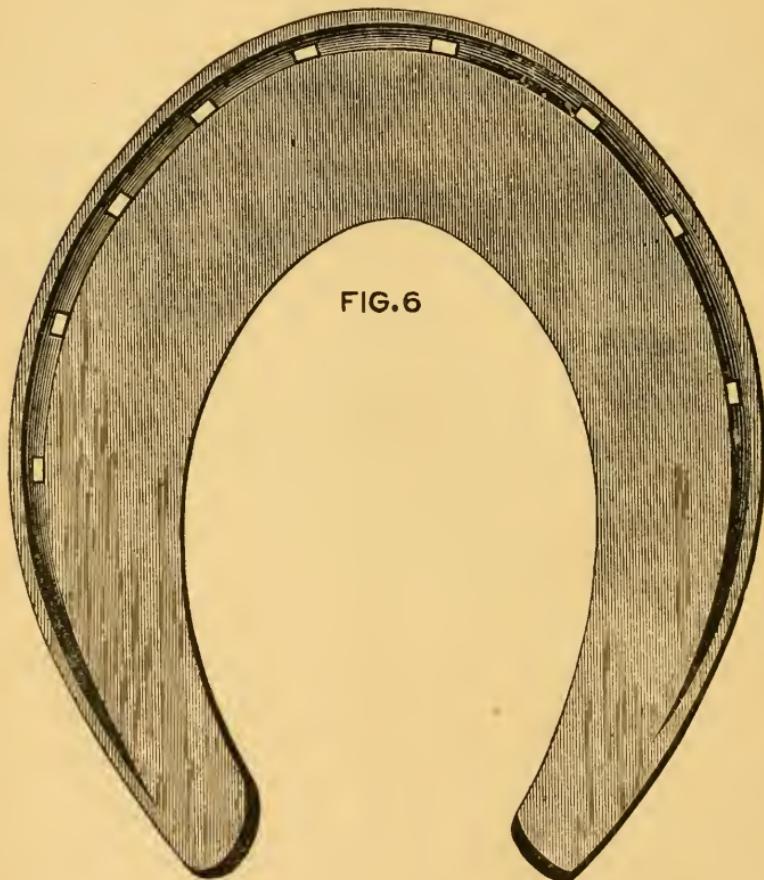
Shoe Fig. 5 is peculiar in shape, and at the present day one of the most valuable in use, on account of the great number of horses crippled in the feet. It is especially useful for quarter cracks, corns in the heel, founder and contracted heels.

The shoe originated in an idea of my own ; you cannot find it described in any work that I have ever seen published. It is made heavy, so as not to spring, but to hold the foot firm in front, and not to rest on the false quarter. For toe cracks use Fig. 6.

The best plan for shoeing horses with quarter-cracks and toe-cracks is as follows: Before operating on the foot or applying the shoe, the foot should be poulticed with linseed or slippery elm ; the poultices to remain on the parts for a period of at least twelve hours. The object in applying a poultice is to soften the hoof, and abate any irritation or lameness which may exist. Then, by means of a crooked end of a knife, all extraneous matter is to be removed from the crack or fissure ; a fine awl, corresponding to the size of the clinch (which is a round shoe nail), is then to be sent through the hoof directly across the crack, taking care not to get too deep a hold, for fear of wounding the sensitive tissues which lie in contact with the inner part of the hoof. The nail or rivet is now to be sent through the awl hole—across the crack—and by means of hammer and pincers it must be well clinched ; then the projecting heads are to be rasped off. The hoof is now to be cut through across the crack close up to the coronet, and thereby all communication between the new growth and the fissure, or crack, is effectually cut off.

When the crack is quite extensive it may be necessary to insert more than one rivet. So soon as the process of riveting is completed the crack or fissure may be dressed with a small quantity of strong spirits of hartshorn or pine tar ; then it may be kept cool by frequent spongings of cold water. A shoe like Fig. 5, affording equal pressure around from the crack, then offsetting, to protect the quarter, but not to rest on it, should be applied ; three nails on the inside, and three on the outside and around the toe, as remote from the heels as possible. This form

of shoe is, under the above circumstances, the best that can be applied. Follow these directions, and in a little while you will have a sound foot.



From what I have already written in reference to the art of shoeing, the reader will probably infer that there is no great difficulty in shoeing a strong, well-formed foot, and all that is necessary in the preparation of such a foot is to level the crust and sole and scrape off any loose portions of horny substance that may be found on the sole, frog or bars.

When the bottom or sole of a horse's foot is flat or convex,

instead of concave, it is at the same time much thinner and less capable of bearing pressure. The shoe for such a foot should be broader than the ordinary one, and must have a good flat seat at the region of the junction of crust and sole, and a deep concave in order that it may protect the sole, but not rest on it. This form of foot being naturally weak, in consequence, perhaps, of some hereditary predisposition, great care should be taken in nailing the same, otherwise the nail is apt, if driven too far in an upward direction, to enter the sensitive tissues, and thus the horse is *pricked*, as we say.

Finally, the feet of horses are often variously deformed, in consequence of predisposition lurking in breed, from bad management and accidental causes. Therefore, it is the business of all persons engaged in the art of shoeing horses to make themselves acquainted with the structure and function of a horse's foot, for, in the present progressive era, when improvements are treading on the heels of improvements, a blacksmith cannot afford to plead ignorance on such important subjects, which are vital to his success as a practical shoeing smith.

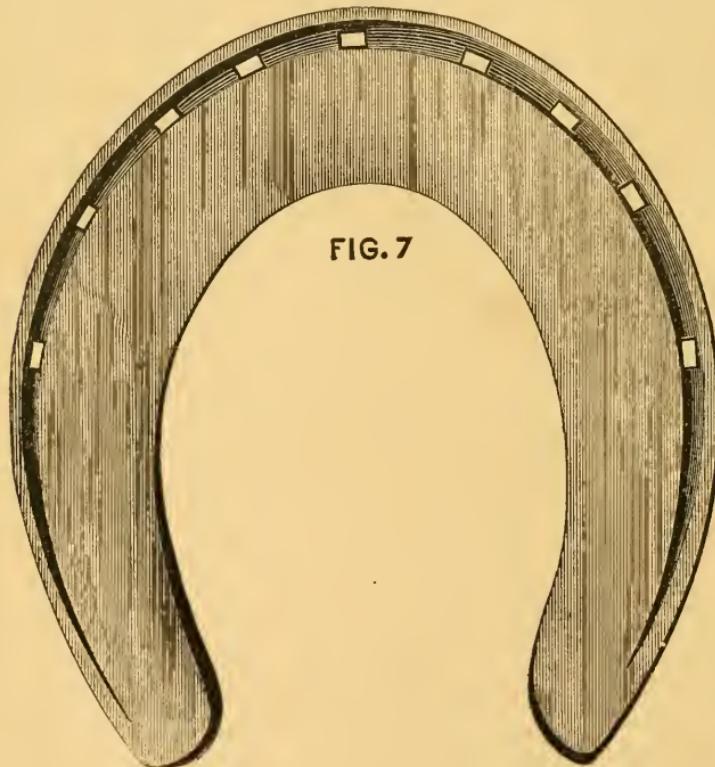
I cannot conscientiously close this article without offering a few remarks in favor of that much-abused class of men known as "blacksmiths." It is my firm belief that they are often, very often, blamed without any rational excuse for censure. For example, a horse is recently shod, becomes suddenly lame; the lameness may be so obscure and unaccountable that the owner and his advisers cannot, by ordinary observation, determine the seat of lameness, and they come to the conclusion that the mysterious lameness has its origin in faulty shoeing, which may not be the case, for many horses are predisposed to various diseases of the feet and lameness of limbs, which, under the very bad system of shoeing, cannot be prevented.

In regard to *bad* shoeing, it is my opinion that many smiths do not obtain a fair compensation for their services in the prosecution of their laborious and dangerous vocation, hence they cannot afford to employ the best kind of help; and if, under the circumstances, a horse's shoes are merely tacked on to the feet, at

the rate of the prevalent bread and butter price, the owner of the horse is more culpable than the smith.

If *horse owners* have a desire to guard against the consequences of faulty shoeing, and wish to have their horses shod in a satisfactory manner, I advise them to pay the blacksmith a *living* price, so that he can afford to employ "good help"—men who know how to perform work in a workmanlike manner.

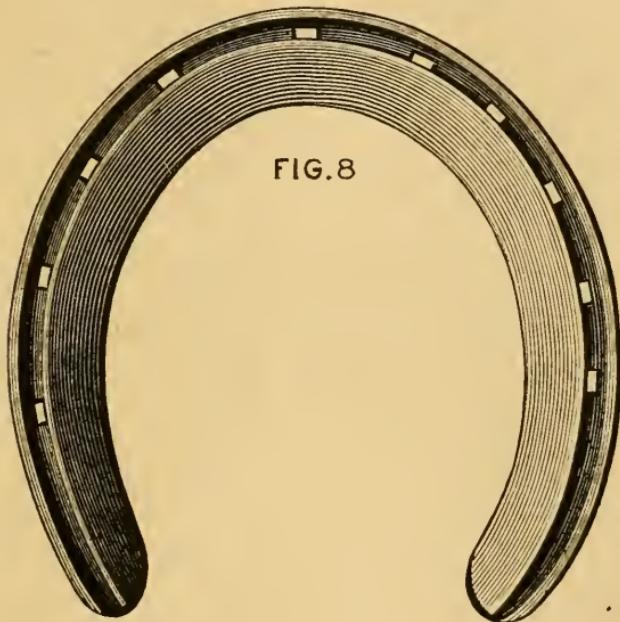
Taking a rational view of the art of shoeing, the greatest wonder is how so many horses used for draft purposes on our unyielding pavements enjoy freedom from foot lameness.



This shoe is a trotting plate for the front foot. It is made very heavy, concaved upward nearly to the heels, then convexed; nails around the toe to make it firm and fast. The weight is

to give the horse momentum, as dumb-bells are used by persons in jumping. These shoes are in general use, and it is not necessary for me to dwell on them.

FIG. 8



This shoe is designed for the hind foot of a trotting horse. It is made convexed and light, to give the shoe some chance to catch, without corks, and not to carry any dirt. This, too, is well known among horsemen.

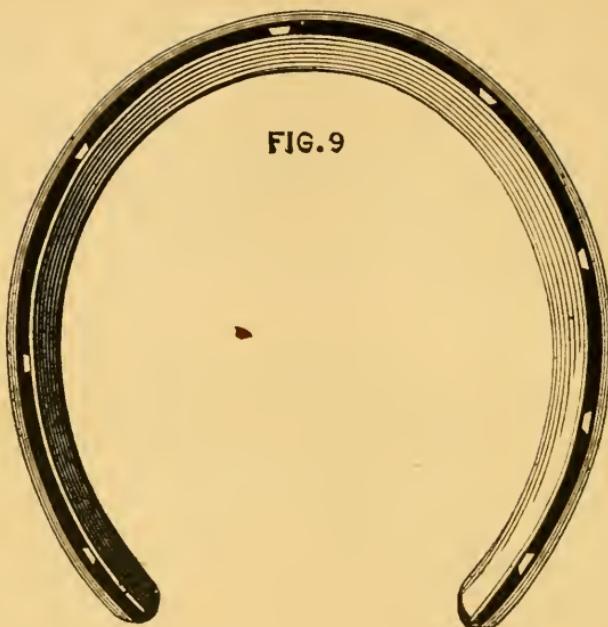


FIG. 9

This shoe is a steel plate for a running horse. It is made light, as no other kind would do. It is intended simply to cover the rim of the foot during one race, then it is taken off and a heavy shoe put on.

The above shoes are all of my own making. It is not expected, however, that all shoers will make their own shoes, nor is it necessary, for the National Steel Shoe, with solid toe calks, made by the National Horse Shoe Company, of Chicago, are good and cheaper than an iron shoe, and, if properly fitted, are good enough for any one. I made these simply to show the principle on which they are formed and the manner of fitting. As for nails, I would say the *Globe* nail is the best now made, as I have tried them all; they are made by the *Globe Horse Nail Company*, of Boston. The above shoes and nails can be had of any hardware dealer.

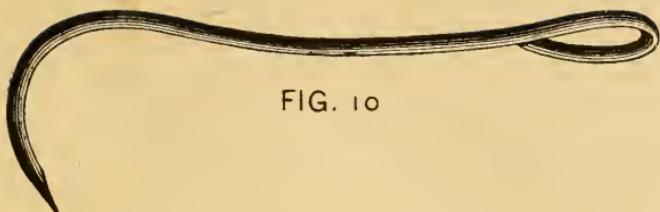


FIG. 10

This is a foot-hook, too simple and well-known to need a description. Use it.

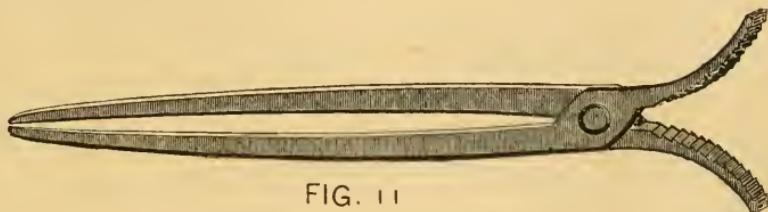


FIG. 11

This instrument is for clinching the nails on the foot of a horse without the use of a hammer. This I think a very useful tool, and one that all shoeing smiths should adopt, especially on sore and tender feet, for you do the work very easily and then it saves the torture of hammering on the tender feet. Make one and try it.

SHOEING THE MULE.

I have already told you how to shoe the horse. To shoe a mule use the same rules as in shoeing a horse, except that as the foot of the mule is rather inclined to "throw out" at the toe and stand backward, bearing more on the coffin joint and ankle, the space being greater between the ankle and coffin joint than in the horse's foot, you must keep the toe well cut down and the heels high. Fit the shoe to the rim of the foot, especially at the heels, and do not turn the heels of the shoe outward, as some do. The shoe should be a little longer than the horse's, in order to keep the heels high. Convex the heels and in a little while the foot will spread and be broad and strong. I can grow a mule's foot as wide as a horse's.

IN REGARD TO THE RULES FOR SHOEING HORSES.

The reader is probably well aware that great diversity of opinion exists among men regarding the best method of applying shoes to horses' feet; yet it is my firm belief that the *best* system is that which is calculated to preserve the natural function, position and action of the feet, and adopts that kind of shoe which affords the most protection, yet allows the frog to come in contact with the ground on which the animal stands, or over which it travels.

No specific rule can obtain in the general art of shoeing, for the simple reason that the feet differ very much under the conditions of health and disease; hence a certain form of shoe well adapted to meet the requirements of one condition might prove positively injurious in another, as is often the case.

It is generally understood that the hoof is sufficiently elastic to guard against the jar and concussion which occurs every time the feet are planted on the ground. This elasticity, as observed in a healthy and unfettered hoof, occurs in downward and backward directions. It is scarcely perceptible, yet wisely is it so ordained, for if there was much expansibility or lateral motion to the hoof, it would prove ruinous to the foot, and the chances of securing a shoe to the same without positive injury would be very small.

It is evident that nature has provided for some slight action of this kind, for the hoof is left open at the heels, between which is interposed a soft, elastic substance known as the frog, which allows of the motions alluded to. Had the intention been otherwise the hoof might have presented itself in the form of a hollow cylinder.

The parts within the hoof known as the laminæ, or *leaves*, articulate with each other, and the extent of their articulation is that of the joint contraction and expansion of the hoof, modified, of course, under the influence of partial or complete pressure while traveling on the road.

Now, in order to favor this physiological action of the foot,

the nails must not be inserted any nearer the heels than the safety of the shoe requires; for, should the shoe be nailed *all around*, as the saying is, the hoof at its solar border is fettered, hence the action of articulation cannot occur and the horse soon becomes lame. Three nails are often all that are needed to secure the shoe to the foot, provided, however, that the nail-heads be countersunk, and the points well clinched; if they are not, the shoe becomes loose, in consequence of the nails being driven upward by repeated blows on their heads, as the horses travel on hard roads and unyielding pavements.

If possible, the frog should be allowed to come in contact with the ground, for it acts as a pad and very much lessens jar or concussion, which otherwise must necessarily occur; it thus becomes a wall of defense, and the nature of the ground over which the creature travels determines the form, character and endurance of the frog.

Thus in the unshod colt we usually, in a healthy foot, find the frog well formed, prominent and callous; this is the result of the stimulating knocks it receives when traveling on hard roads. On the other hand, should we examine some animals' feet after they have been long submitted to the evils of domestication, which includes faulty shoeing, we shall find that the frog is often imperfect, both in function and structure. Our Creator made a foot nearly round; the smith makes it like a clevis or a flat iron, which shows that you can grow a foot of any shape you may wish.

I would not have the reader infer from these remarks that the blacksmith is always blamable for the loss of frog, etc., for in the winter *calks* seem to be necessary, and under such circumstances it is almost impossible to bring the frog in contact with the ground, hence it may deteriorate. Then, again, there are various diseases of the foot which interfere with the integrity of the frog as well as that of other parts which enter into the composition of a horse's foot.

ON THE APPLICATION OF HOT SHOES.

Hot shoes, as they are often applied, tend to carbonize the sole and crust, increase the temperature of the foot or feet, and thus, for the time being, induce functional derangement of the plantar system ; and if the horse be the subject of an inflammatory diathesis, or at all predisposed to disease of the feet, of an acute character, the *hot shoe may possibly*, and it often does, operate as an exciting cause to develop a latent affection.

In view of giving the *non-professional* reader some idea of the anatomy of the parts, that he may exercise his own judgment in the premises, I offer the following : By means of a microscope, we detect on the inside of the hoof — superior and inferior parts — a vast number of perforations, resembling the net-work of a sieve ; these are termed “plantar porosities.” In contact with these parts are the sensitive tissues, composed of slender fibres or filaments, termed papillæ (*nipple*), highly organized structures, consisting of cellular, venous, arterial and nervous tissues. Supposing that we use a microscope which magnifies two hundred and fifty *times* or *diameters*, each papillary arrangement appears of the size of four twenty-fifths of an inch, and they are to be found throughout the entire circumference of the fleshy sole ; the papillæ are in contiguity with the porosities, and their function is to secrete the equivalents of organization, and thus maintain the integrity of the feet.

The porosities alluded to are the inlets, outlets, commencement and terminations of the agglutinated hollow tubes — numbering many thousands — which collectively compose the wall and base of the hoof. Into these hollow tubes are prolongations. The latter are heated, burned, or altered in structure when brought in contact with a red-hot shoe ; hence the function of the same must necessarily be impaired.

In the *crust*, or wall of the foot, the tubular arrangement is somewhat perpendicular. They insidiously increase in length in a downward and forward direction, which gives length to the hoof. In the sole the tubes are horizontal, which explains the

multiplication of the same, and the *modus operandi* of the physiological or *natural* thickening of the sole.

The tubes of the crust and sole are usually considered as continuous; consequently, if we *cut* or *pare* in the region of their junction, we not only open their canals, but weaken their bond of union; and in such cases we must expect dislocation of the laminæ, which is equivalent to descent of sole, known as "flat or convex feet."

Hence, a *red-hot* shoe applied to the living tissues of a healthy foot must necessarily contract the calibre of the porosities with which it is brought in contact, and impair the function of the same.

The reader is probably aware that moist heat does tend to relax all tissues of the animal economy, and that the reverse is the case when heat alone is applied. For example, a dry floor, or a stall floor, strewed with sawdust, a dry, sandy beach, all abstract moisture from moist bodies; yet a *heated* shoe is a more direct absorber of moisture than either of the above, and must, necessarily, communicate an undue amount of caloric to the parts. By this method the foot is not only carbonized, but a *febrile* or *inflammatory* condition is inaugurated.

In view of sustaining the latter proposition, I introduce the following evidence from a report on the subject, made by a distinguished professor of the veterinary art, a resident of France. By a series of experiments he discovered that the hoof and the sole were conductors of caloric; that the conductile power of the *crust* was inferior to that of the *sole* (yet the latter often gets a pretty essential burning whenever a horse is brought to be shod), the very part that ought not to be burned. He found, also, that it is not before the lapse of four or five minutes after combustion that the thermometer indicates the highest degree of heat to the foot. Also, that the thinner the crust is, the more heat becomes transmitted to the internal parts.

Having thus assured himself of the hoof's conducting power, his next object was to ascertain the amount of heat transmitted to the sensitive tissues. The facts are as follows:

From *twelve* experiments made on feet, in view of throwing light on a subject hitherto considered as *dark*, the following are the results:

First. That the ordinary shoe, heated to cherry redness, and applied to a horny sole of an inch in thickness, and kept burning for one minute, the carbonized portion not being obliterated in "paring out the foot, has transmitted from three to four degrees of caloric to the villo-papillary and reticular tissue.

Second. That the greatest amount of caloric transmitted in these experiments was felt, according to the thermometer, between the fourth and sixth minute from the application of the heated shoe.

Third. That the sole, pared to the thickness of one-third of an inch, giving under the pressure of the thumb, and the iron kept burning on it for half a minute, exhibited the villo-papillæ destroyed by the caloric.

Fourth. That when the sole had but one-eighth of an inch in thickness, and readily bent under the thumb, when the heated shoe was held upon it, burning for half a minute, both its villo-papillæ and the surface of the reticular tissues were destroyed by the caloric:

From other twelve experiments, performed with the shoe heated to black redness, the following facts were gleaned:

First. The shoe being applied to the sole upon which the burnt mark still remained, it was found to transmit in the same time more caloric to the living tissues than the iron at a *cherry* red heat.

Second. The dull heated iron, the thickness of the sole being the same, caused a more lively and deeper burn than the bright heated one.

Third. These experiments confirm what was said by the elder Lafosse, in 1858, viz., that it was not the bright heated iron which oftenest occasioned the burning of the fleshy sole, but rather the iron brought to a dull or obscure heat.

A notion has generally passed current among persons engaged in the art of shoeing that if the burnt part of the sole be pared

away, by means of the ordinary tools, immediately after the application of the hot shoe, the burn is obliterated, with its effects at the same time. I found this, however, by placing my hand upon the burnt spot, and by testing it with a thermometer, not to be correct, and I further demonstrated its fallacy by direct experiment.

The reader will now perceive that the danger apprehended as the result of hot shoeing is not entirely groundless; neither do the effects of the same exist only in a fertile imagination, as some writers have asserted, but there is often more truth than poetry in the matter. Unfortunately we have a vast amount of book knowledge on *shoeing*, which often passes current as the result of scientific investigation; yet, in my opinion, the horse and its owner would have been better off had such works never been written.

Some smiths contend that it is necessary to apply hot shoes in order to "ascertain the *bearings*," or rather to discover the uneven parts which necessarily occur as the result of *faulty* paring. Now I contend that a good workman, with proper tools at command, can make an even surface; hence a *good* workman has no reasonable excuse for the unnecessary application of red hot shoes. In fact the application of the same either shows that the smith is wedded to the errors of our forefathers or else is deficient in skill. Now if this be true, every *honest* smith who understands his business should try to dispense with hot shoeing, and consider the practice as one of the barbarisms of the ancients, whose policy it was "never to forget what they had learned and never learn anything new."

Some smiths, I am informed, merely apply the heated shoe for the purpose of carbonizing, and thus softening the sole and crust of the hoof, so that it can be easily pared. This, I think, is a very lame excuse, for in most cases too much of the same is removed, and thus the horse has "tender feet."

If the above is true, then it appears that the intelligent and progressive smith of the present day has no rational excuse for the application of heated shoes; and he who acts according to

the dictates of reason and humanity is sure to secure a good business, and the thanks of an intelligent community will be his reward.

In offering the above remarks on the practice and principles of shoeing, I have no desire to scold or find fault with the honest smith,

“ Whose brow is often wet with honest sweat,”

for it is a well-known fact that lameness in horses is often attributed to faulty shoeing, when such is not the case. For example, a horse has recently been shod, and becomes suddenly lame; this lameness may be so obscure that the owner cannot determine its location, and he jumps at the conclusion that the lameness has its origin in faulty shoeing, when the reverse is the case—the animal being lame in the shoulder instead of the foot.

REMARKS ON THE FROG.

There are several reasons why a large portion of the frog should not be removed, and I will briefly allude to some of them. In the healthy frog there is a solid, wedge-like portion of horn extending from the cleft to the point of the same; it lies directly under that small yet very important bone known as the “navicular” (which signifies *boat shape*), and this bone, its region and contiguous tissues often become the seat of a very painful disease, known as *navicular thritis*—inflammation of the parts. This disease often arises, so say the authorities, in consequence of removing the bulbous prolongation termed the anterior point and bulb of the frog, the function of which is to protect, to a certain extent, this bone and the sensitive parts connected with it, and to shield them from the injuries which might otherwise occur when the animal is made to travel fast over hard and uneven roads.

A very distinguished physiologist has asserted that when once this bulbous enlargement is cut off it can never be reproduced, and thus this peculiar bulbous enlargement is seldom found in a horse’s foot after he has been pared and shod. But I think differently. Let the frog alone; shoe so as not to cramp

the heels, and use the black oil liniment or common pine tar freely and you can restore it. This enlargement or thickening of horny substance in the frog not only protects the navicular region, but it also shields the coffin joint; yet there is no part of the sole that receives such a thorough paring as this.

The bulb of the toe once removed, nature causes augmented secretion of horny substance to make up for the loss of this bulb; this secretion is often very abundant, but nature is no match against the knife improperly used. The faster the horn grows, the better chance is there for those who feel disposed to cut and whittle it at every subsequent shoeing; then the secretory function soon becomes impaired, and we find that the part finally becomes inelastic and brittle.

The frog, as a whole, is that cushion-like substance which, by coming in contact with the ground, prevents jar and concussion, not only to the sensitive tissues within the hoof, but to the joints above; in fact, by the same means, some jar or concussion which might otherwise occur to the whole body is lessened.

The frog is a part which is developed in the same ratio with other parts of the hoof, provided the parts are in a healthy condition, and thus the integrity of the whole is preserved; the frog, therefore, serving as a part of the basis of the animal structure, cannot be removed with impunity.

The reader is probably aware that if the frog be cut away so that nothing but the shoe comes in contact with the earth, the body of the animal has little, if any, solar support; hence arise the strain of the laminæ, and, finally, descent of the sole.

Strain, or *sprain*, of the laminæ, and descent of the sole, is followed by structural alterations of tissues and parts within the hoof, and then the animal is said to be "foundered"—ruined in the feet.

When preparing the foot in view of applying the shoe, it may be proper to remove just about as much of loose and rough portions of frog as the animal might be supposed to wear off, provided he were not shod; and yet, according to the testimony of eminent surgeons, this is not always good policy, for these ragged and un-

couth looking parts usually serve as a protection to new formations beneath, and should not be removed until the latter are perfected.

I am aware that the frog looks better when pared, but a healthy condition of the parts does not consist altogether in good looks; and the same reasoning applies to the body of the animal. There are many fine looking horses in the country, yet many of them, in consequence of hereditary predisposition and insidious disease, may be next to death's door. We get a very handsome looking hoof and frog by means of the knife and rasp, but I defy any man to preserve their integrity and keep them healthy by such instruments, when used to excess.

There was a time when the practice of cutting away the frog was recommended by surgeons themselves, so that the smiths who now, in good faith, practice it are not always blamable. One author, whose work I have perused, endeavors to smooth the matter over as follows: "The frog offers so little resistance to the knife, and presents such an even surface, so clean and nice, and cuts so easy, that it requires more philosophy than many smiths possess to resist the temptation to slice it away, despite a knowledge, in some instances, that it would be far wiser to let the frog alone."

One of the most distinguished cavalry surgeons of the British army says that he never allows a knife to touch the frog, for the simple reason that a long experience has shown conclusively that the frog possesses, under certain circumstances, less reproductive powers than some other parts of the hoof; and the individual alluded to has had horses in his possession for more than five years, whose frogs never scraped acquaintance with a knife or anything of that sort.

The reader may desire to know how the frog is to disencumber itself of its ragged and apparently superfluous surfaces; if so, I will answer that nature has provided a means, which is a process of casting off, or sloughing, and when this does occur, a new growth is seen beneath it, a smaller frog is visible, yet it is an entire one, and soon acquires magnitude in ratio with its connections.

PRESSURE ON THE FROG.

Goodwin says: "It is an incontrovertible fact that unless the frog receives a certain degree of pressure, it will degenerate and become incapable of affording sufficient protection to the sensitive frog which it covers; that the heels will gradually contract; that the bars alone are not sufficient to prevent the same, though they certainly oppose it with considerable force. But it does not follow from this that it is necessary for the pressure to be constant, nor is it believed that a shoe which allows the frog to bear on the ground when the horse stands upon a plane, hard surface, can always be applied even to a sound foot without inconvenience. There is no doubt that a horse in a state of nature has his frog almost always in contact with the ground, and then of course he feels no inconvenience from it; but when burthens are placed upon his back and he is driven about on hard roads, he is certainly in very different circumstances, and if the frog in such cases was constantly exposed to this severe pressure, it would no doubt occasion lameness." Still, a certain amount of pressure is absolutely necessary, for unless that be the case, descent of the sole and disease of the laminæ are apt to occur.

In view of giving the reader some idea of the theory and art of shoeing horses in Scotland, I here introduce a selection from the "Scottish Farmer."

"In preparing the horse's foot to be shod, the requirement in the skill of the operator above all is, that he shall know the right form and required bearing surface of that particular foot; he has, in fact, as much to give the bearing surface to the foot as he will afterward have to adapt the shoe to it. The foot surface and that of the iron shoe to be applied are entirely dependent on the skill and understanding of the shoer, and on these mainly depends the success of the whole process. We will go a little further in explanation. When we have adjusted the foot, whether it be a sound or an unsound one, we proceed to adopt our shoe accordingly, and if the understanding and manual skill are efficient, the shoe will be brought to the foot in every way moulded to its

requirements. In approximating the two surfaces, which is always done once or twice, and, if necessary, more frequently, till the adaptation is complete, we just as much review the foot as we do the shoe, and may in the critical process with as much propriety file away a little hoof as we may in the other case bend the iron under the hammer. In either case it is necessarily an adaptation of surfaces, the foot in the first part of the preparation being approximately finished, as the shoe when first tried is the same. In answer to the question, what parts of the hoof are to be removed? we would say *none*, only so far as is necessary to give the circumference and due proportion to the whole hoof. This we may say cannot always be effected, unfortunately, as horses' feet come to our hands we find such deficiency, through destruction of parts, and not unfrequently a general debility throughout the whole hoof, that we can only make the best use of what remains.

"Among the most common deteriorations in form, under the present custom of shoeing, is a low, weak state of the hoof across the quarters—that is taking a transverse line across the center of the foot, immediately under the line of bearing. This low and weak state proceeds from two causes, first, from the method of preparing the feet; secondly, from the way they are shod, so that the iron gravitates, nay, is often converted into a lever, the fulcrum of which is in that center alike in both branches of the shoe, and the hoof is worn, or, as is said, ridden down by the pressure. Another common defect is the foot being higher on one side than the other, and thus every part of the foot and limb is thrown out of its natural line of bearing. Then we have many disturbances in the line of obliquity which the foot, in its natural state, should bear to the limb. We find variations of half an inch or an inch in the depth of the heels, under different modes of preparing the foot, and a similar extreme at the point constituting what is called length or shortening of the toe. All these, which nature has ordained to be exact, are found to vary by the inch, and the defects are variously complicated in the same foot. To know how to prepare the foot implies an under-

standing of all these deviations. We may be asked, are there no parts of the foot to be removed and others to be conserved besides that which comes under the general meaning of proportion in depth, breadth and length of the whole? We say, no. In adjusting the foot we have to deal with the wall, and if that part is well done and the foot well shod, the other parts, viz., the sole and the frog, are necessarily taken care of, though the horn is secreted constantly on those parts like that of a wall, to meet the wear, the process of detaching is different; the sole and frog detach their outer layers as they become superabundant, which, however, as is commonly the case, the foot is badly prepared and badly shod, the sole may become, as it does, imprisoned by an overlapping of the wall and want of the general natural functions of the foot. Then the process of exfoliation may be interrupted, the proper remedy in which case is not to hack and sink holes into the sole, but restore the balance of the whole foot by removal of disturbing causes. The instruments at present in use with us for preparing the horse's foot are of the most ill-adapted kind; and here we are prepared to be met by the observation that a good workman will effect his object with any tool. It would, perhaps, however be more correct to say that an able artist will generally devise a proper instrument to effect his object. Two instruments are used for the reduction of the hoof, the knife and rasp. These are both of modern introduction for that purpose, and, as applies to the old world, they are confined to our country. These instruments are coeval with a doctrine of shoeing which has prevailed for between sixty and seventy years. Previous to that time, an instrument similar to that in use up to the present time all over the continent, called a butteris, was adopted in Great Britain. To the late Professor Coleman is mainly due the abolition of the butteris and substitution of the knife. The reason assigned was that the old one was an ungainly, clumsy tool, and, certainly, to perform what the new doctrine in shoeing was requiring, it was not the instrument. It was laid down as a rule that the sole was to be cut away; that it was to be pared thin every time the horse was shod; that there were

certain parts called bars that were to be preserved, which consisted in neither more nor less than a carving away of the sole almost to the blood, and leaving a small ridge at each angle, between which the hook of the knife was freely used to scoop out what was called the seat of corn. The little knife bent so as to reach to every crevice and angle of the foot, was just the destructive instrument to do such work, but was in no way adapted to adjust a foot for the shoe; indeed, no one ever used it, or does so now, for that purpose. The rasp is used for lowering the wall. There is a point where the work of these two instruments meet; the little crooked knife clears away and destroys the sole, leaving a thin edge of wall, which the rasp sweeps away. A rasp or file was long in use with us, as it is now on the continent; but little use is made of it there, since the butteris, a broad cutting instrument, gives a much better bearing surface to the foot, and the file is used to a small extent only in finishing the work. We may give some notion of the adaptation of the old instrument, the butteris, and the thorough unfitness of the knife for the same office, by a few comparisons.

"Every one knows that if he wants to form an exact surface or line he does not choose a very small instrument, but one of breadth and length. A joiner does not use his chisel, but his long plane, to strike a plain, smooth surface. A man who carves handsomely and economically a joint of meat does not take his pocket-knife, but one with a broad, well-adapted blade. A man who cuts leather uses a broad instrument, and he can do it with exactness. We may go farther, and adduce the tailors' large shears as he divides his broadcloth. The fact is, the little instrument makes notches and holes, destroys and weakens, and this has been preëminently the case in the application of the knife to the destruction of horses' feet.

"We will, in conclusion, say a few words as to how this change was effected. To abolish an instrument from the land, which was well adapted for the requirement, and to introduce into general application one which we hold to be ill adapted, seems difficult to account for. The fact is, at the time the

London Veterinary College was first established (nearly seventy years ago), and subsequently, its principal was able to carry any point, almost at command. The power was displayed in the army, through which changes in the plan of shoeing were rapidly carried, and there the butteris was at once abolished and the knife substituted. The same thing followed through all the principal forges, and since the scooping out of the foot was pronounced to be a requirement, and insisted on, compliance on the part of the workmen to use the knife was the more readily exacted. Subsequently the rasp manufacturers adapted that instrument, so that instead of the little fine-cut rasp and file of the former times a sharper, rougher and bigger instrument was introduced, with which a strong man could reduce the hoof, and even destroy it, with a very few sweeping strokes. How we are to get back to a more rational system than now prevails is the work to which we have put our shoulders."

OVER-REACHING.

This unpleasant noise—known also by the term clicking—arises from the toe of the hind-foot knocking against the shoe of the fore-foot. In the trot, one fore-leg and the opposite hind-leg are first lifted from the ground and moved forward, the other fore-leg and the opposite hind-leg remaining fixed, but to keep the center of gravity within the base; and as the stride, or space passed over by these legs is often greater than the distance between the fore and hind-feet, it is necessary that the fore-feet should be alternately moved out of the way for the hind ones to descend; then (as occasionally happens with horses not perfectly broken and have not been taught their paces, and especially if they have high hind-quarters and low fore ones), if the fore-feet are not raised in time the hind-feet will strike them; the fore-foot will generally be caught when it has just begun to be raised, and the toe of the hind-foot will meet the middle of the bottom of the fore-foot. It is an unpleasant noise, and not altogether free from danger, for it may so happen that a horse,—the action of whose feet generally so much interferes with each other,—

may advance the hind-foot a little more rapidly, or raise the fore one a little more slowly, so that the blow may fall on the heel of the shoe, and loosen or displace it; or the two shoes may be locked together and the animal may be thrown; or the contusion may be received even higher and on the tendons of the leg, and considerable swelling and lameness will follow. A blow received on the heel of the fore-foot, in this manner, has not unfrequently — and especially if neglected — been followed by quittor. The heels most frequently suffer in over-reaching, although the pastern is sometimes injured; it usually or almost always occurs in fast paces on deep ground; the injury is inflicted by the edge of the inner part of the shoe. The remedies are many— what will stop one horse will not stop another.

Some horses have too much action in front, and some too much behind. Some you can stop by putting long heavy shoes in front, so that the hind shoe will strike under the heels of the front shoe as they are raised, instead of hitting the heels of a short shoe, and put light shoes behind, and set them back at the toe and let the wall project over; and if you put on a toe-caulk, put that well back to the inside of the shoe so that it will not strike the front foot. This plan is good for all hind feet, whether you shoe them light or heavy; in others you will find it is the best to put on a two-pound shoe behind and a half-pound shoe in front. I have stopped them in this way. The object is to weight the feet to make them go slow, and light weight to make them go fast; so you will see, if the front feet are shod light they will get out of the way, while the hind feet are shod heavy to keep them back. All this you must ascertain by experiments, for you rarely stop them the first time trying; and then hard or light driving has a great deal to do with it. Never drive too hard.

CORNS ON HORSES' FEET.

In the angle between the bars and the quarters, the horn of the sole has sometimes a red appearance, and is more spongy and softer than any other part. The horse flinches when this partition of the horn is pressed upon, and occasional or permanent lameness

is produced. This disease of the foot is termed corn, bearing this resemblance to the corns of the human being, that it is produced by pressure, and is a cause of lameness. When corns are neglected, so much inflammation is produced in that part of the sensible sole that suppuration follows, and to that quittor succeeds, and the matter either undermines the horny sole or is discharged at the cornet. The pressure hereby produced manifests itself in various ways. When the foot becomes contracted, the part of the sole enclosed between the external crust wearing in, and the bars that are opposing that contraction, is placed in a kind of vice, and becomes inflamed, hence it is rare to see a contracted foot without corns. When the shoe is left on too long the heels of the shoe will become embedded in the heels of the foot. The external crust grows down on the outside of it, and the bearing is thrown on this angular portion of the sole. No portion of the sole can bear continued pressure, and inflammation and corns are the result. From the long time shoes are left on (for economy) they become loose at the heels, and gravel insinuates itself between the shoe and the crust, and accumulates in the angle, and sometimes seriously wounds it.

The bars are too frequently cut away, and then the heels are cut away, then the heels of the shoe concaved, so that they will fit the foot so cut and mutilated by this concaving the shoe clear to the heels. An unnatural disposition to contraction is given, and the sole must suffer in two ways—in being pressed upon by the shoe, and squeezed between the outer crust and the external portion of the bar. The shoe is often made too wide at the heels, so when the shoe becomes bedded to the foot, the heels rest on the outside of the wall, and, being concaved, will press the heels in and cause contraction, and bruises, and corns. In paring the foot, leave the bars full, pare out the horn in the angle between the bars and outward crust or wall, then fit the shoe the shape of the foot; follow the walls nicely and convex the heels so that the shoe when bedded will press the heels out, then he will do right, and you cannot make narrow heels or corns. When I shoe a horse I always see that the shoe rests easy on the heels. The

unshod colt rarely has corns. The heels have their natural power of expansion, they have a large frog, broad heels, strong braces. So we must make up our minds that contraction and corns are to be laid to faulty shoeing. I have seen horses eighteen years old that never had a shoe on; they had large feet, strong bars, wide heels, soft and large frogs. Why? Because they were in the stage of nature. But I claim you can shoe a horse as long as he lives and keep his feet free from contraction and corns; but if the horse-shoer is the best in the world, and he is to be dictated to by the ignorant horse owner, he is not to blame if the feet are spoiled; for, in order to keep his trade, he has to cater to the notions of the customer, and then gets the blame if the horse is lame. Some want to have old shoes set as long as they will hold together and there is a hole in them; they think this is economy. Not so, for they will spring and be imbedded in the heels, and by this unnatural pressure on the sole, blood is thrown out and enters into the pores of the soft and diseased horn, which is then secreted.

Corns are most frequent and serious in horses with thin and flat soles and low, weak heels. To cure old corns is sometimes difficult, but in the end is sure and certain. Recent corns will yield to good shoeing. My plan is, and has been for many years, to pare out the corn until I get to the bottom, if I draw blood. I use a jack knife blade, ground at the point on both edges like a fleam, so that I can get down deep and not make a large hole; leave the wall and braces, then hold up the foot and pour the hole full of muriatic acid, then take a hot poker and burn it in, and sear the corn; then take the shoe (Fig. 5) and fit it to the foot; have the offset commence a little front of the corn, and if you wish the shoe caulked, put on a side caulk in front of the offset; then you will protect the sore heel and corn; put the nails well at the toe, and nail firm, before you put on the shoe; fill the hole with pure pine tar and cotton; this keeps the dirt out and heals up the horn. This rarely fails in the first instance. The shoe should be set often, until the hole is entirely healed up.

This (see fig. 5) I consider far ahead of the bar shoe in all cases of corns or contraction.

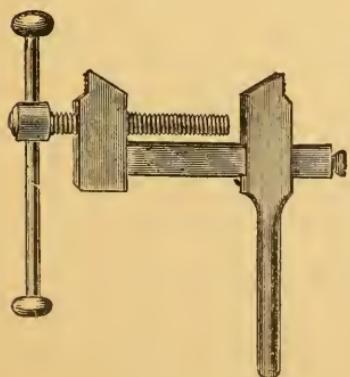
When you find a soft corn cut it out until it bleeds freely; this will draw out the inflammation. Treat it the same as any other corn.

There is nothing perhaps that has assisted the veterinary art and relieved the horse from suffering more than horse-shoeing, properly done, where corns now exist. They are a disgrace to to the smith, groom and owner.

PICKING UP NAILS, STUBS, ETC.

First, remove the nail or stub. If it bleeds freely, all right; the more it bleeds, the better; if not, take a sharp-pointed knife, clean out the hole, and bleed well—this runs off the poison. Do not cut away the sole or frog more than you can help; then put in a few drops of muriatic acid and heat it in with a hot iron; then cover it over with pine tar, hot, and cover the whole sole with horse manure. If the horse is lame the next day, open the hole and bleed again, and repeat the treatment; this will prevent its festering. The acid will kill the poison, the tar will heal it up. If the horse should continue lame, open the sore until it bleeds, then poltace with linseed meal and use Furlong's boots; do this and you will cure the horse and prevent the lock jaw.

THE FOOT SPREADER.



THE FOOT SPREADER.

This cut represents a foot spreader. It is to be used with a great of CAUTION in spreading horses feet that are contracted, for if you use it on a dry foot you will ruin it for life; you must first soften the foot and prepare it for spreading, and to do it, is in this way. Take your horse to the shop, take off the old shoes, pare down the toe, leave the heels high, put on the shoe, figure 5,

in the book, then put on Furlong's soaking boots, with a large sponge to fill the cavity, and fill it with lye made in this way: take two quarts of wood ashes, put this in a wooden bucket, fill the bucket with boiling water, and you have it, put this in the sponge twice a day. If he has corns, kill them. The book will tell you what a corn is, and how to cure it. When the foot gets soft, then use the spreader every other day, spreading only $\frac{1}{4}$ inch at a time. Spread the shoe and it takes the foot with it. This spreader is made of cast steel, very strong, for it requires so to be. When you get the foot spread out to the proper size, then use the hoof liquid, in the book, this will make the foot tough, and will set it to the place where it should be, then follow the directions for shoeing horses, in the book, in the first place, and you will have sound feet, then take the frog for your guide. When it becomes hard, put on the Furlong boots, sponges, and clear water, this gets down to nature, what it gets in the pasture. Any one can make the spreader, that can hammer cast steel, and there is no shoeing shop complete without it.

MECHANICAL RECEIPTS.

TO TEMPER TAPS AND DIES.

This is plain and simple, and never fails. I have used it for thirty years. Take a tin can that will hold half a gallon, and fill it with lard oil. Heat the taps and dies slow and even—at a dark cherry red. Then take them with a cold pair of tonges and put in the oil. Stir them, and cool as soon as possible, and they are done. Draw no temper, and they will stand and cut a steel bolt, if the steel is annealed. The best way to aneal is to heat the steel at a low heat, and put into forge ashes until cool.

TO TEMPER MILL PICKS.

To six quarts soft water add one ounce of corrosive sublimate, two ounces sal ammoniac, these two pulverized; one pound of common salt, dissolve in a little warm water; then put all together, and it is fit for use. Heat the picks slowly and even, as far as you want them tempered, at a low cherry red heat, and plunge them in and cool them off. Draw no temper, and they will stand the hardest millstone. Keep the liquid covered in a stone jar, for it is poison.

TO WELD CAST OR ANY KIND OF STEEL.

Take borax, one pound; sal ammoniac, one-half an ounce; prussiate of potash, one-half an ounce; one pint of rain water. Put all in a kettle over a slow fire, and stir until all the water boils away, then keep in on the fire and stir until it becomes fine like flour, and is dry. Then take it off and cool. Then put in one ounce of black oxide of manganese and mix and grind all through a coffee-mill. Use as borax, only a less quantity. It welds at a low heat, and will do what borax will not do. This is the boss for welding, and it is cheap; ten cents buys all but the borax, and it will go as far as three pounds of borax, and it never fails.

THE HORSE COLLAR.

THIS is a subject upon which much has been said and written, and yet the poor horse is still made to suffer. Why? Because the collars are not rightly made. One man makes them of the right size to fit a horse; another makes them open at the top, puts on a strap and buckle, so as to use one collar for all horses. This is wrong, and has caused more trouble with horses, in the way of sore shoulders and feet, poll evil and fistula, than many imagine.

You take great pains in selecting and fitting the bridle and checks, breeching, back straps, "lines," etc.; but when you come to "hitch up," you have no collar that fits your horse. You say, "Never mind, bring me 'old Bill's,' that will do; I can 'take it up' or 'let it out,'" as the case may require. And you drive off. When you return you take off the harness, and let your horse stand in the dirt and sweat, just as he came off the road, and the next day your horse is sore, and you think that perhaps you have foundered him. You bleed and blister him; still the horse is lame. Why? Because you have not found the cause of the lameness. Now examine his shoulders; you will find, by pressing on his neck and shoulders, that *they*, with the cords running to the feet, are sore. He cannot speak to tell you, so you must examine and find the place affected for yourself. This you can easily do, as he will flinch, as you would, should any one touch a sore upon your body.

When you find the lame spot attend to it at once; don't wait until the "hired man," or some one else does it. Do it yourself, and do *not* go into the house and smoke your pipe while your

horse is in pain. Wash the sore spot with salt and water and vinegar, as I have before directed; then use the black oil lini-
ment, and in a few days he will be well.

Then use some *common sense*; go and get a collar made that will fit his breast and shoulders. In making collars some cut them "straight stuff," and hammer them into shape. The best way is to *learn your trade*; cut the collars to fit the shoulder, by giving them *spring* and *belly*, so that when you stuff them they are of the right shape to fit the horse. Then fasten them solidly at the top, and mark this one for Bob or Bill, and never use it on any other horse unless it fits him.

I will here say that I wish that I had the power to put into the penitentiary for one year every man that would have a buckle and strap put on a collar. Many blame the collar maker, without just cause, for these things. You go to a harness maker and ask if he has any collars. He says, "Yes; what size do you want?" You say, "About medium size. Put a good long strap and a buckle on it; then I can take it up or let it out as I wish." The harness maker tells you to bring the horse and he will fit it; but you say, "I will fit it." You take and use it, and what is the result? Your horse is lame, and no doubt you will go about cursing the harness maker; blaming him as a botch, when you yourself are the one to be blamed.

You might as well go to a shoe maker and ask for a pair of boots, and when he asks you what size, tell him, "I don't know; John has a big foot; give me a large pair." And to carry the comparison still further, you take the boots home; they are two or three sizes too large; but you say, "Never mind, wear them out." What is the result? He is "tired out," his feet are chafed; he, in a short time, has corns on his toes; the cords of the legs are sore, and he is "laid up," as the saying is, by some *mysterious visitation of Providence*. You send for a doctor, pay him five or ten dollars, and you are satisfied. The same is true of a horse.

You might as well make all boots on one last for the same foot, and then cut them off the right length, as to make all collars on one block, from fifteen to twenty-four. Try to learn

something in this particular, and in that way you may save money. That I consider the best of economy.

I cannot close this article without giving you some useful suggestions. Now I am opposed to the use of the hame collar, when you can use a breast collar. Why? Because the breast collar is easy on the breast, leaves the shoulders free, and in warm weather is cool. The main cords and veins running from the poll forward, backward and down the breast and legs into the feet, are free; it does not stop the circulation of the blood, or wear on contracted shoulders. Take good care of the front part of the horse, for there it is that they first receive the concussion in traveling, and the hind parts will take care of themselves. Farmers, if you would use the old-fashioned "Dutch" collar in plowing, and as little harness as possible, you would have fewer sore horses. I have seen men plowing with a full set of harness on and the horses checked up; this is wrong.

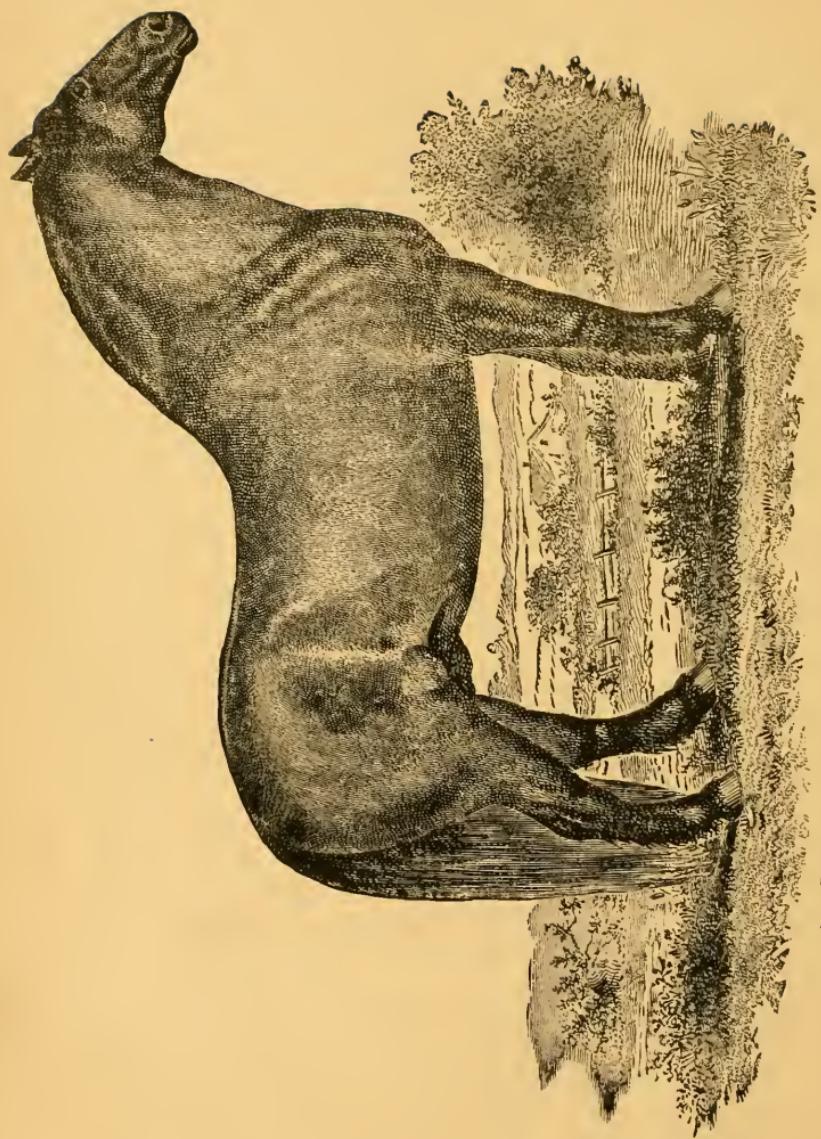
APPENDIX.

General History of the Horse,

The Education of the Horse,

The Age of the Horse,

*Rules and Regulations of “The National
Trotting Association,” and Betting
Rules.*



AN ENGLISH DRAUGHT HORSE — Ein Englisches Zugpferd.

GENERAL HISTORY OF THE HORSE.

GENERAL DESCRIPTION.

THE Horse (*Equidae*), is distinguished in his medium height, fine form, well proportioned, strong limbs, lean, out-stretched head, with large expressive eyes, medium size pricked ears and expanding nostrils. The neck is strong and muscular, the body round and fleshy, the coat of hair soft and short, but fitting snugly. The hair on mane and tail is long and wavy. The unsplit and neat hoof of the horse suffices to distinguish him from all other cloven animals. Of the three different kinds of teeth, there are the same equal number, six incisors, six long molars, with somewhat rounding grooves on the outer surface, and small hooked, blunt cone-shaped corner nippers form the mouth piece of the horse.

In the skeleton, the length of the skull is remarkable, a third of which covers the brain capacity, the remaining two-thirds falling to the face. The breast is enclosed by sixteen vertebræ; eight form the loins, five the crupper, whereas the tail vertebræ number as high as twenty-one. For the mastication of food, the small tube leading into the stomach, and provided with a little trap, is deserving of notice. The stomach itself is simply an undivided small oval bag.

Horses are by nature spirited, lively, sagacious animals, their movements graceful and proud. The ordinary gait of the untamed horse is a rather brisk trot; in speeding, a somewhat light gallop. Gentle and peacefully inclined towards other animals, when not provoked, fearing wild animals and entertaining for men a similar shyness, defending themselves in case of necessity

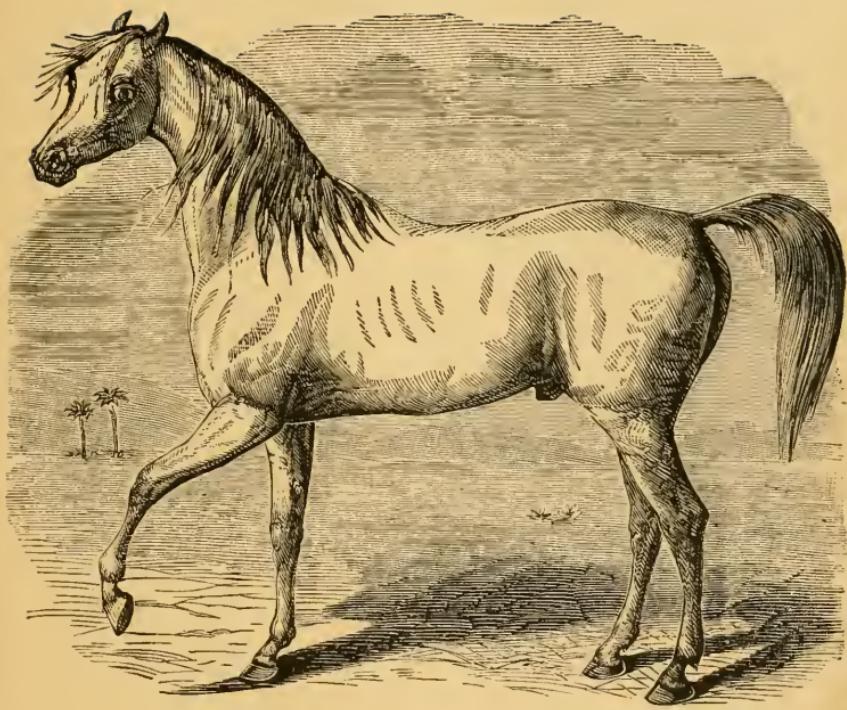
from their foes by biting and kicking. Their increase is slow. The mare, after carrying a long time, brings forth but a single colt.

ORIGIN OF THE HORSE.

Two at least, perhaps three tribes, have succumbed to man. History does not tell us when it first became a domestic animal; even that part of the globe, where horses were first domesticated, remains a mystery. The belief is, that to Central Asia belongs the title, and to whose people our thanks are due for the acquirement of the horse; yet is the date and race unknown, to which we might turn in this extremity.

THE ARABIAN HORSE.

At the head of all horse tribes, up to the present day, stands the Arabian. For centuries past, careful training has brought to bear with his numberless qualifications, the steed in his present state. The Arabians claim the following combine the perfect horse: Symmetrical build, short pricked ears, heavy, but finely formed bones, a fleshless face, nostrils "expanding as the jaws of a lion." Fine, dark beaming eyes, "whose expression loving as a woman's," the neck long and bent, breast and crupper broad, narrow back, hind quarters rounding, very long proper and very short shallow ribs, body well enlaced, long upper shanks, "like those of the ostrich," with the muscles of a camel, a plain black hoof, a fine somewhat sparingly settled mane, but a full flowing tail, heavy at the roots, thinner toward the end. The following four parts must be wide, namely, the forehead, the hips and the limbs; the neck, the upper shanks, the belly and the flanks must be long; the croup, the ears, the crest and the tail must be short. These qualifications signify that the horse is of a pure breed and active; thus it compares in his construction with "the greyhound, the dove and the camel" at the same time. The mare must be possessing of the courage and



THE ARAB HORSE. — Das Araber Pferd.

the width of the head the same as that of the wild hog, the grace, the eye and the mouth of the gazelle, merry and cunning as the antelope, the compact build and speed of the ostrich and the tail as short as a viper.

All Arabs are of the opinion, that the Arabian steed has ever been of the same noble specimen as it is to-day, and, therefore, use great precaution in the rearing of their horses. Certain customs have become habitual with them. Such as that each owner deems himself in duty bound to loan his stallion to the possessor of a noble mare, for the purpose of increasing the pure breed. Stallions of pure breed are much sought after. The owner of a mare will often ride hundreds of miles in search of a stallion to breed from. In return for such favors, the owner of the stallion is presented with a certain amount of barley, a sheep, and a bag of milk. To accept money is considered ignominious, and would be branded as "selling the love of his horse;" only in the case of a nobleman being called upon to loan his stallion for an inferior mare is he at liberty to refuse. While the mare is in foal she is given the greatest of care, although in the last month only remains entirely unmolested. During the parturition witnesses must be present to certify to the pure breed of the foal. The young colt is treated with great consideration, and as one of the family. Thus it is that the Arabian horse has become so tame that he is often seen wandering in his master's tent, or with the children at play.

In the eighteenth month the training of this noble animal begins. At first a youth attempts to ride him. He leads him to water, to graze, cleans, in fact takes entire charge of him. Both being taught at the same time, the boy becomes a rider, the horse well to ride; nor will the young Arab seek in any way to overload his charge, or demand of him things not in his power to fulfill. The animal's every movement is watched, and treated with the utmost kindness, though quick to punish resistance and malevolence. Not until the expiration of the second year is the

horse won to the saddle. At the onset the bit is wound round with wool or flannel, and oft besprinkled with salt water, to accustom the horse more readily to the unpleasant iron in his mouth. The saddle used is as light as possible in the beginning. After the third year he has gradually learned to make use of all his powers, however never waiving from the course of his training. Nowhere is the power of training so felt as in the deserts. As the Arabian says : "The horseman lifts up and instructs his horse, as the husband the wife." The services of a well-trained Arabian horse are truly great.

HORSE BREEDING IN ENGLAND.

At the present time the English are looked upon as fully equal the Arabians in the breeding of horses. Two centuries ago the Spaniards and Italians put up better horses than the Britons ; since then, however, the retarding of the former has advanced the progress of the latter. The race horse is the untiring and persevering effort to produce an animal excelling all others in speed. Arabian, Turkish and Barb horses are pointed out as the ancestors of the race horse, which, in the eyes of the English, excels all others, though to the unprejudiced in beauty and form far behind the Arabian steed. Being more than spare, whose angular form is far from picturesque, head and neck having lost all claim of being symmetrical, nevertheless it is improved upon and brought out in all populated parts of the European world, and often brings fifty thousand dollars, if not more. To be sure, if the horse comes out ahead in the race, its owner may come into the possession of a sufficiently remunerative sum. "King Herod" won, in racing, £201,505. A three year old thoroughbred will speed, on an average, 850 yards per minute. All thoroughbreds are enrolled in the Stud Book of Great Britain, in which to refer regarding their pedigree.

THE TRAKEHNER HORSE.

In Germany the breeding of horses has received due atten-

tion only since the beginning of the last century. Until then it was thought sufficient to rear horses without much attention as to their pedigree. In the end of the last century the breeding of horses in Germany was below that of the middle ages, which was in closer relation with the East than later centuries. A national breed of horses then was not in the least the idea. In Prussia Frederick William I. was the first to bring the high breeding of horses in the right channel; after which, in order to fill his stables with pure breeds, he caused to be erected the Stud Trakehner, thereby laying the foundation of a national method to ennable the until then neglected old Prussian horse. Crossing the breed of Arabian and English thoroughbreds, has brought forth the Trakehner much like the race horse, yet stronger, and by far the most serviceable, which we may still call the German horse, especially as Trakehner and its branch establishments have had an essential influence in the breeding and exalting of all old Prussian horses, and which influence is still strongly felt.

Next to Prussia are Hanover, Mecklenburg, Holstein, and principally Wurtemberg, given to the breeding of horses, whereas, in Westphalia and along the Rhine are chiefly found large heavy animals, particularly the Percheron, a gigantic, powerful animal, who derives its name from its birthplace, the old French province Perche, which has become very popular of late, as the animal is found very proficient for heavy work.

THE SOUTH AMERICAN HORSE.

At the end of the fifteenth century, some time after the discovery of America, little was known of the horse in this hemisphere; not until the year 1535, when a few were introduced by the Spaniards, and in the year 1537 a number were transported into Paraguay. From these few were bred the countless herds which have since spread over the entire southern part of the hemisphere, and from there, crossing the Isthmus of Panama, have roamed into and spread over the whole of North America. In

both of these divisions the horse runs wild, where the plains are adapted to him, and not yet cultivated, but principally in South America are found the greatest number of wild horses, on the extensive plains which stretch almost unbroken from the La Plata to the Patagonia. Here herds, numbering some thousands in each, may be seen, each under the guidance of a master stallion, who enforces submission to his will so long as he has the power to do so. Here the native Gaucho has only to throw his lasso and supply himself with a horse, that will carry him for miles at a gallop until spent; lassos another, and so on. It was in this way that Captain Head rode from one coast to the other (across the continent) changing horses at every fifty or sixty miles. These wild horses greatly resemble their Spanish ancestors in form and build. They are quoted as possessing great speed, though not greater than the average foreign breeds. Nevertheless, from their wild habits, have good wind in speeding, and it is said that a Gaucho has been known to ride one newly caught horse over 100 miles without feeding.

THE MUSTANG, OR NORTH AMERICAN HORSE.

Like the wild horse of South America, those of Mexico and California are undoubtedly of the same Spanish blood; in fact, it is impossible to define with anything like certainty the origination of the Indian pony, large herds of which run wild in the north and northwestern part of the continent.

THE INDIAN PONY.

The Indian pony, which is seldom or never over thirteen hands high, is noted for its liveliness and strength. Notwithstanding its small size, it can accomplish a great deal, and, although the limbs of the rider almost touch the ground, he moves under the burden with ease. He has a high crest, and a flowing mane and tail, carries his head high, making a fine appearance.

The body is strongly built and the legs and feet are composed of the most lasting material. Large herds of these ponies may be found on the prairies of the Northwest, and many are transported into Canada for use.

THE CANADIAN HORSE.

The Canadian horse is generally about fourteen to fifteen hands high, and is noticeable for its hardiness; capable of traveling long distances, but in his own way not above the average in speed. When crossed, however, with a thoroughbred, it combines the speed of the latter with his own tenaciousness, iron constitution and legs. In this way are bred some of the best race horses. Next to the active Canadian horse, there are many more American breeds, namely: The "Morgan Horse," the "American Courser," the "Narraganset Pacer" and the "Thoroughbred," whose ancestors having been imported, of English and French blood, has thus little of domestic blood in its veins. Of the agricultural horse there is to be mentioned the Vermont and Conestoga draught horse, and several others not classified. The horse differs in the various regions of the United States. In several instances, certain classes have been sorted out for breeding; still, the greater part of our horses which are considered "pure breed" retain the name and character they inherited from England and France. It was customary, until recently, to underestimate the value of the American horse. Special attention is given now to the breeding of large heavy horses. In comparison with all other classes our own horse ranks the same, on an average, as those of other countries. Our fast horses will run equally as fast, and our racers and trotters have greater speed than others. In general, our horses are worthy the praise of being active, cunning, sagacious, and of a good disposition.

THE THOROUGHBRED.

The term thoroughbred is applied to the horse of a breed, namely, the English-French race-horse. This breed deserves

with right to be the first on the list—not so much on account of its practical usefulness as the influence it has on other breeds and classes. It is the most symmetrical type of a horse, for speed, courage, and strength, trained principally for the race. Horses of this breed are, in general, poor pacers, and very seldom good trotters. They are generally too light to perform heavy work, and often too restless and excited for light work. By crossing the breed has greatly improved the American horse. The thoroughbred is a descendant of the Arab, Barb, Turkish, and Persian horses, and to some extent crossed with English horses. Nearly a century has been given, and no pains spared, to the breeding of these horses, which are now decidedly larger and faster than their forefathers and the modern Arabian steed. The English settlers—chiefly those in the Southern States—imported, in earlier times, quite a number of these horses, and thus were many bred here. Horse-racing has never been as popular in the United States as in England, although it is believed that the same time could be made here. The American race-horse, Ten Broek, ran a mile in one minute and forty seconds. The most popular colors of these horses are bay, chestnut, and brown. Gray and black are also seen occasionally. White spots on head and neck are also not uncommon. They are from fifteen to sixteen hands high; the average weight is 1,000 pounds. These horses possess a light head and neck, with broad forehead, beaming eye, and large nostrils. The rump is quite long, the back and sides muscular. The breast is well developed, the withers of medium height, shoulders sloping, the hips wide, the hind quarters long and more powerful than the fore parts. The legs are somewhat lengthy, the bones fine, the pasterns long and inclining. The skin is soft, the hair short and fine; mane and tail light and straight. Among the celebrated horses of this breed, of the imported or those bred here, are mentioned Messenger, Diomed Duroc, Trustee, and, of late, Lexington, Leamington, Australia, Bonnie Scotland, and Ten Broek.

TRAINING OF HORSES.

THE right education of the horse is of the greatest importance for its value to the wants of man. In the following lessons we endeavor to explain in the most direct manner possible, certain infallible rules, which, if strictly adhered to, will surely and safely accomplish the result desired. Explanations of the traits, habits, and causes of the habits of the animal, with reasons for every step to be taken, will, as far as necessary, accompany each illustration.

THE WILD COLT.

The inclosure in which you intend to operate upon the colt must be unoccupied by anything which might distract the attention of the colt; for instance, fowls, domestic animals, etc., and all persons except the one who is to undertake the training. This latter precaution should be taken for the reason that the presence of other parties would annoy the colt.

Get the colt into his training-place as carefully as possible, using such gentle means as may be convenient and most likely to be successful without exciting the colt. We have found the following rules very useful :

HALTER-BREAK THE COLT.

This is often accompanied with danger, unless the proper steps are taken to avoid it. Our experience has taught us that at this point it is well to be governed by these rules: *First*, Provide against accident to yourself; *Second*, Secure your horse against the possibility of injury; *Third*, Accomplish your desire with the animal in the quickest time possible to render the lesson a permanent one. Having these rules in view, we proceed as follows: Take a stick about the size of a rake-stale, and about ten or twelve feet in length, the length to be governed by the

prospect of danger from the viciousness or nervousness of the colt. Commence within about an inch of one end, and whittle up a few stout shavings on one side, whittling *toward* the center of the stick, and leaving the shavings attached to the stick; a few inches from the shavings alluded to (the distance to be governed by the width apart of the colt's ears), whittle up a few similar shavings, whittling this time *from* the center of the stick. Take a common rope halter, with a running noose; hang the part of the halter which is intended to rest on the head back of the ears, upon the shavings (they being strong enough to bear the weight of the halter), turning the shavings upward for security in holding it. You can now commence operations with the colt, in doing which it is advisable to understand the fact that *curiosity* is a strong trait in the horse, and, when not overcome by fear or some other powerful influence, is sure to prevail. This you can test previous to operating, if you choose, by placing a hat or handkerchief upon the end of your stick, and holding it toward the colt. He may be alarmed at first, but if you remain quiet, moving the object gently, the nature of the colt will be to reach his nose toward it, and quite likely to touch it. He will soon become accustomed to the stick, and will manifest the same curiosity in regard to the halter. You will now take the halter, with the noose unloosened perhaps half the length of the halter-stale, holding the end with the stick in both hands, the halter being placed upon the shavings, as before suggested. If the halter-stale is not long enough, attach a piece, as it is best to keep yourself as far as possible from the colt. The colt will gradually begin to smell at the halter, when you will hold the stick pretty well up over the head, and while the animal's attention is attracted by the swinging of the halter, and his nose near that portion of the halter-stale which is slipped through the noose, you will gently pass the rope over his ears, and, turning the stick half round, drop the rope from the shavings upon the colt's head, just back of the ears. This will probably cause the

colt to start back, and, by holding firmly upon the halter-stale, the noose will be drawn up, fastening the halter upon the head. The stick may now be laid aside.

Having your colt haltered, your object is now to teach him its use. You will take a position about opposite the shoulder, still keeping at a distance, and give him a sharp, short pull toward you, sufficient to move him, immediately slackening your pull. The object in doing this is to cause the animal to feel your power to move him, and by slackening the pull you do not give him time to resist, which, if the pull should be steady, he will do, even to the extent of throwing himself down (which is to be always avoided). This you may repeat for a few times, until the disposition to resist seems to grow weaker. You will then repeat the operation upon the other side, alternating from side to side (always avoiding a forward pull), and continuing the short pulls until the colt either moves readily or becomes stubborn. The reason for working upon both sides is that in this, as well as all other points which you attempt to instruct the horse, there are *two sides to teach*. What he learns to do from one side must be learned by the same process on the other side, in order to have the same understanding of what is required of him. The reason for avoiding a forward pull is that you can not easily move the colt in that direction; and, as he learns from your acts, you should attempt to perform no act in which you are not reasonably sure to succeed.

If the colt appears to be of a yielding disposition, you will now gradually shorten your hold upon the halter, as you pull from side to side, being watchful to avoid the possibility of his striking or kicking you, until you come within reach of his head, when you will gently put forth your hand and allow him to examine it with his nose—that organ being the one made use of by all horses to test the danger or harmlessness of substances which alarm them. As he becomes accustomed to your presence, which he will readily do if you are gentle, you will then proceed to care-

fully caress him over the face and forehead, gradually extending your hand down his neck, being cautious not to touch his ears. As soon as he begins to cringe or grow restive under your hand, remove it and gently place it again near his nose, repeating the former operation, extending the hand farther and farther at each repetition, until he becomes calm. You will now quietly tie a knot through the noose, so that it can not slip, leaving it quite loose, to *avoid hurting him*. You will now step back and repeat the pulling operation, being careful to get a *side pull*. As you pass in front, if the colt shows a disposition to move, instead of pulling immediately, first approach and caress him, performing slowly and gently, and, as far as you can, *encouraging* the animal whenever he shows signs of doing what you require, until he steps willingly *without the pull*.



Figure 1.

Should the colt prove to be of a *stubborn* disposition, and refuse to move as you desire, you will take hold of the halter-stale with your left hand about a foot from the head, and

with your right hand seize him by the tail, and give him a few sharp turns around, pulling the head toward you, and giving him an occasional kick with the top of your foot across the buttock. (*See Figure 1.*) This will have the effect of creating a degree of submission, the colt learning that he has a master. Now proceed with the pulling as before ; and if he remains stubborn, repeat the operation of turning twice or three times. By this time he will probably appear to brighten up, and show signs of being willing to step. If he should not, you will take a bow-top whip or beech limb in your right hand, holding the halter-stale with



Figure 2.

your left hand, you standing by his side. Hold the whip over the back of the colt and touch him gently with it across the off-side hip, at the same moment giving a gentle side pull upon the halter. (*See Figure 2.*) If he starts forward with this movement caress him and then repeat with the whip. If he does not start, use a little more force with the whip. If he is still stubborn and does not show signs of moving, caress him, give him a kind look or word, and step back a few moments before proceeding.

allowing him to get quiet if he appears angered ; as the reason for this conduct is that the colt is frightened, and by your kindness and patience alone is he to be assured that you do not mean to injure him. He will soon grow less excited, when you may proceed. As soon as the colt will step readily at a slight side pull, take off the halter or throw the halter-stale over the neck, and let him go.

The colt should now be left alone for at least half an hour, or until he has recovered from the excitement. Any time thereafter, the lesson may be repeated ; and as soon as he becomes perfectly accustomed to obey the side^s pull, you may then, and not before, commence to teach him to obey the forward pull, by gently pulling him straight ahead ; and if he leads, no matter how little, caress him and repeat ; but be careful and not pull too hard. If he does not move with a reasonable pull, give him two or three of the short side pulls, and try again. In a little while he will obey your desire, and lead. Be sure and not give a determined pull in front, as it will not succeed, and will only teach the colt your weakness, and by inflicting pain upon him learn him to pull at the halter—the natural movement being in an opposite direction from whatever causes the pain.

HITCHING THE COLT IN THE STALL.

The stall, which should be a common one-horse stall, about four feet wide, should be prepared by having a hole bored on each side of the rear end of the stall, to put a pole through, or staples driven in to tie a rope or strap across, at about the height where the breeching would come on the colt if harnessed. You will lead the colt into the stall ; and if some other person can be called to assist, have him put up the pole or strap—if not, do it yourself, being sure to have it done *before you tie the colt*. The reason for putting up the obstruction in the rear before tying is, because you thereby avoid the risk of the colt, through fright, pulling at the halter. When once tied, which should be with considerable slack, if he attempts to back out of the stall he will

hit the rope or pole and step *forward*, instead of hurting his head with the halter and *pulling harder to avoid the hurt*. In removing the colt from the stall be sure and untie the halter before loosening the obstruction in the rear, and for the first few days be careful and not hitch the colt where he can have a chance to pull. By observing these rules for eight or ten days, there is no danger that the colt will ever become a halter-puller. Bear in mind that during the entire process of handling the colt it is proper and necessary to speak to him in a mild manner, for the purpose of familiarizing him with your voice, and as a partial guard over your own temper. Never speak sharp or over loud, but gently and firmly. For instance, in your side pulls say, "Come here, sir!" This kept up, will eventually teach the colt to come to you on being called by these words.

THE BITTING-BRIDLE.

(See Figures 3 and 4.)



Figure 3.

A convenient way to make it, is, to take a common harness pad and crouper ; pull out the breeching strap and take out the terrets (or a rope around the body and a strap for the crouper will answer.) Put on a common driving bridle without blinds ; under all circumstances use a joint-bit. Take a piece of cotton clothes-line rope, about ten feet long ; place the center of the rope in the check-hook, or fasten it to the strap which runs to the crouper ; pass one end of the rope through the gag-runner on the near side of the horse, passing it from toward the nostril back through the ring of the bit ; draw it tolerably tight,

center of the rope in the check-hook, or fasten it to the strap which runs to the crouper ; pass one end of the rope through the gag-runner on the near side of the horse, passing it from toward the nostril back through the ring of the bit ; draw it tolerably tight,

and tie it to the pad or girth at the side. Perform the same operation on the off side. You will see that by tying the rope to the girth well up the sides toward the check-hook, it will compel him to hold his head high, and will throw the nose out; by tying them well down on the side it will lower the head and curve the neck, at the same time giving him the power to move the head up and down with considerable ease. In cases where bitting is required only for the purpose of suppling and developing the muscles of the neck this bridle should be used, as we have never known a horse to be injured by falling backward by being geared in this bridle.

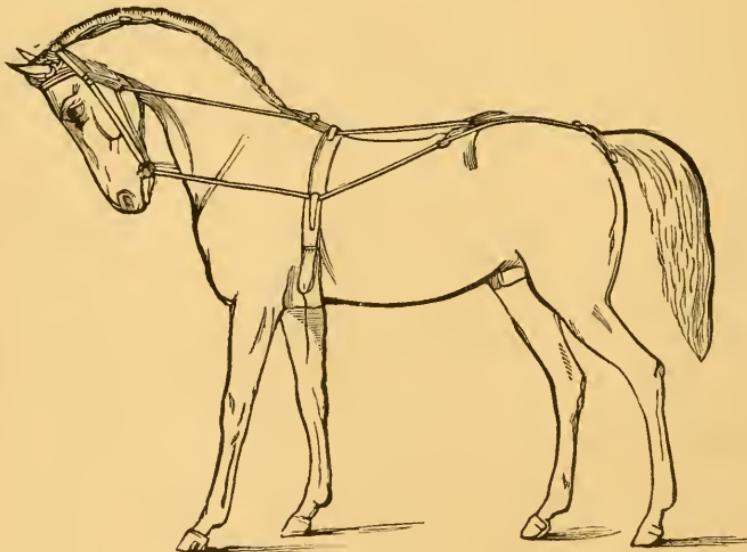


Figure 4.

In placing the bitting-bridle upon the colt great care should be taken not to buckle any of the straps very tight at first, as you might give pain and alarm the animal. Be particular and have the throat-latch loose enough, so that when he straightens up it will not choke him. Many horses have been ruined by carelessness in this particular. In gearing him up care should be taken that the check is not too tight at first, lest he should, in rearing, go over

backward and fall on the top of his head. Another reason is, that he will thereby yield more readily to the side-reins. The checking up should be governed by the length and form of the neck and shoulders. The side straps should be buckled just sufficiently to impose restraint upon the colt. As soon as the colt shows a disposition to yield the bridle should be removed on the check and side straps loosened. This should be done within *at least five minutes* from the time it is put on. The oftener it is taken off and replaced, for the first three days, the better; not, however, removing it while the colt is sulky and refuses to move his head. A lesson to be taught him here is, that he can not be loosened from the restraint *while he is resisting it*. This will prove useful in all future dealings with the animal. At your leisure you may now proceed

TO GET THE COLT USED TO THE BIT.

Place on the colt an ordinary head-stall with a joint-bit, without any check-strap or reins. Leave him in the stable or yard for a few minutes, then remove it. Frequently replace it, and allow it to remain on a short time. By this means his mouth becomes used to the bit, which is a great improvement on the old way of putting on the biting-bridle at once. After a few times doing this, the colt is ready for harnessing.

HARNESSING OF THE COLT.

In the first place, harness the colt and allow him to walk around the yard or remain in the barn about a half an hour, to get accustomed to the rattling of the straps and the feeling of the harness in these unaccustomed positions; then remove the harness. When convenient replace the harness, for a short time, and again remove it. The third time you harness the colt, after he has been harnessed a few minutes, pass the tugs through the ring of the breeching and tie them, drawing the breeching and breast-collar pretty snugly against the body. After a little time you may commence to drive him with the reins, turning him in

different directions, and gently urging him forward, impressing upon him the fact that you control him, thus teaching him to obey the rein and go without leading. Be careful each time to repeat the word "whoa!" at the same instant you pull up on the reins to stop him.

HITCHING UP THE COLT.

If possible avoid hitching him up single. If it is really necessary, however, to do so, be particular to place him in the thills as quietly as possible. As there is no particular danger attached to this transaction, we have no established rule, leaving the operator to be governed by circumstances and his own judgment. Before hitching him to the wagon, rattle the thills, shake the wagon, walk him out and in between the thills, leading him in toward the wagon, unchecking him and allowing him to examine in his own way the object which is so new and terrifying to him. You must accustom him to the wagon or there will be danger. If he continues frightened in spite of these efforts, it will be well to let him go for a while. If after one or two attempts he still continues excited and restive, you may apply the biting bridle. You may then hitch him to the wagon and drive him very carefully on level ground for a short time, for the first few times avoiding backing and turning if possible, being careful for a few days to give only short drives; after which several miles and back will do no harm, gradually toughening the colt to do your work.

We recommend, however—and it is the only method which can be *safely* used—to hitch the colt up alongside of a broke horse, putting him on the off-side. The harness being on both horses (quite loosely on the colt), with long inside lines you will buckle a short strap around the near hoof of the colt just below the fetlock, with an inch ring slipped on the strap before buckling and left there. Tie a long line or rope to the ring, pass it under the girth of the colt, bringing it up on the outside of his trace,

and holding it with the line in your hands. You will then drive the team about; as you start them, promptly and decidedly using such word as you choose, never varying from the same word, frequently pulling up the lines and saying "whoa!" at the same drawing up on the line attached to the foot, until the foot is lifted from the ground and held there, leaving the colt standing on three legs in spite of his struggles. After a few times doing this you may unharness him, as that is sufficient for this lesson. When ready to hitch up, which you may now do at your leisure, you will do as before, and, after a little driving, hitch the team to the wagon and get in. You now have the foot-strap alluded to (*see Figure 5*) passing from your hand between the pole and the colt's near trace, under his girth and fastened to

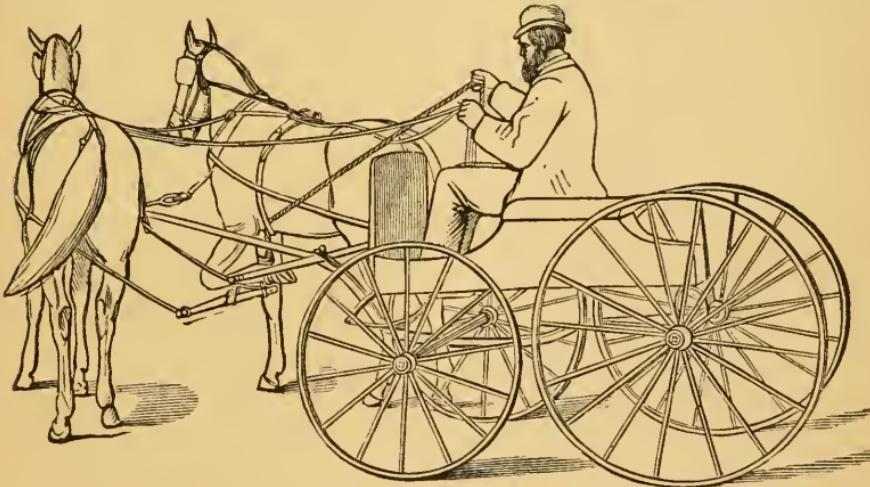


Figure 5.

the near foot. You may now start up slowly, stopping the team once or twice while on a walk, saying "whoa!" as before, and pulling up the footstrap. You will now readily perceive that you have perfect control over the colt's movements, whether on a walk or run, and without any danger to the colt. The colt will not stumble, strange as it may appear, it being almost impossible for him to fall by this means while in motion. Short and lively

drives are what you now want until the colt becomes wonted and obeys the rein and word "whoa!" You may then change sides with him, to teach the *other side of him*, of course changing the foot-strap to the inside each time. When he has by this means become accustomed to being handled freely, you may then hitch him up, single or double as you may choose, for he is now ready to drive.

TEACHING THE COLT TO BACK.

This should not be attempted until the colt has been driven eight or ten days, nor until the habit of readily stopping, starting, driving and obeying the reins has been formed. If this rule is followed no colt will balk, throw himself down in harness, run into the fence, or refuse to stand while the driver is getting into the carriage. When sufficient time has elapsed to warrant you in undertaking to teach him to back, you will take a common bridle, or a bitting-bridle is best, and begin by taking hold of the side-reins, standing in front of the colt, and gently pushing backward, saying "back!" at the time he steps back. This you will repeat until he readily takes two or three steps backward, when you will release him for the present. At the next trial you may put on the reins and take your position behind him, passing the reins through the side loops of the girth, or, if obliged to use a harness, through the thill-straps, holding the reins well down by his side to prevent him from turning round and facing you. Have him loosely checked. As you step behind him, pull gently on the reins, and as he steps backward say "back!" and immediately slacken the lines. A half an hour's exercise is usually sufficient at a time, repeating the operation until he backs readily. It is well to give him one or two sharp, steady pulls, for eight or ten feet backward just before leaving him each time. He is now ready to be hitched up as you usually hitch up your horses, and ready to form the habit of backing to wagon at the word. Be careful for the first few times not to ask him to back

with a load, each time having the wagon in a favorable position, such as descending ground when the attempt is made. By using this caution the colt will soon learn to be handy, and practice will enable him to be perfect. Under all circumstances in handling the colt, *preserve your temper*, no matter how much inconvenienced; for if you lose control of yourself you will be sure to lose control of your charge. The colt is to be governed by kindness and determination, not by abuse and tyranny.

RIDING THE COLT.

This should not be done until he is well bridle-broke. Begin the lesson in the barn or yard. Place on him a common riding-bridle, without girth or martingale. Tie the bridle-reins



Figure 6.

together on top of the neck, tight enough to check him a very little. Stand on the near side, near the shoulder; throw a webbing or tie-strap across the withers, near where the reins lie. Quietly reach under in front and caress the fore-legs, and as soon

as he is sufficiently calmed, tie the webbing or strap to the off-side foot, just below the fetlock. If he is restive, and prevents you from trying it, or shows signs of striking or kicking, take him by the head and tail, the left hand well up to the head, and whirl him around two or three times (*see Figure 1*), and while he is disconcerted by this movement, stoop and tie the strap. Then take hold of the near rein within about four inches of the head, and with the right hand draw upon the strap so as to pull the foot clear from the ground, at the same time pulling on the rein toward you quite firmly, until he has made two or three hops on three legs. The points to be gained by this are, first, you teach the colt that he is not to be hurt, and that he can not get away. This tends to prevent his "plunging" when you afterward attempt to ride him; second, by pulling the strap across the back, it accustoms him to bear a weight upon the back; third, it prevents him from throwing himself over backward; fourth, it accomplishes your desire in a safer and quicker way than any other known. Now take a shorter hold of the web or strap, with the foot held up, passing your right arm well over his back, with the left hold of the near rein and mane near the withers, and then make the motion of mounting. Do this a few times until the colt becomes accustomed to the new positions and movements. Then gently mount him, the foot being still held up. (*See Figure 6*). Now let down the foot and start him along. If he shows signs of being restive or attempting to throw you, pull up the foot and caress him. He will not fall down while the foot is up, as it might be supposed he would. Keep well hold of the foot-strap, untie the knot in the reins, and letting down the foot, commence turning him from side to side and urging him forward. If he is unwilling to start, take a short bow-top whip or switch, holding it in the same hand with which you hold the foot-strap, and gently touch him with it on the off hind-leg, just back of the stifle, gradually increasing the blow until he starts, at the same time loosening the reins. In *turning*

him, use caution and do not pull upon but *one* rein at a time, for the reason that, if you pull upon both, the colt will be apt to run backward, sideways, and otherwise act awkwardly. Do not ride him at a distance the first time. This lesson with the foot-strap should be repeated three or four times, until the colt is accustomed to your presence on his back, and your legs against his side.

TO MOUNT THE COLT.

Take hold of the mane with your left hand, placing the right hand upon the back; then, springing lightly, raise yourself upon your wrists until your middle reaches the height of the horse's withers, when, as you lean over the horse, with a quick spring you throw your weight upon your wrists, pulling strongly with your arms, and with a quick spring, you throw your right leg over the crouper, and are mounted.

KICKING IN DOUBLE HARNESS.

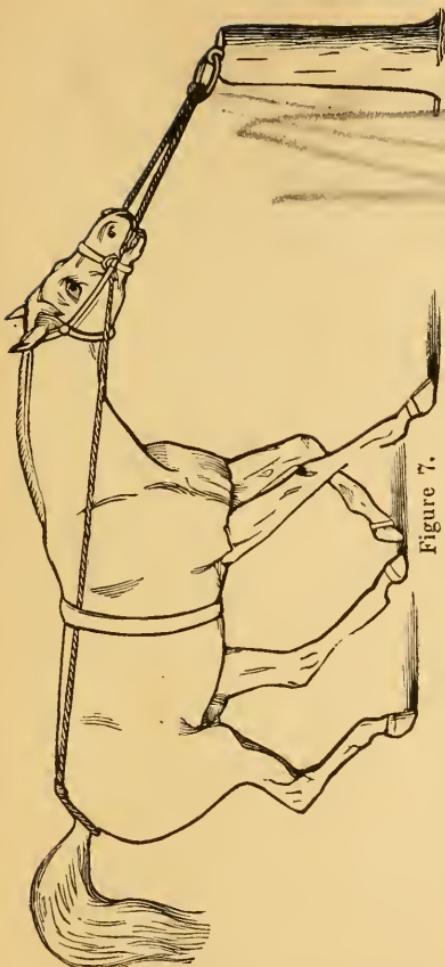
A very disagreeable and contemptibly mean habit—one quite likely to be bred, but, if not, sure to have been caused by mismanagement—is that of crowding against the pole, and frisking and kicking while in double harness. To break him of this habit, and, in the act of breaking him, to form other habits which are of value, take the colt into the barn or yard, and apply the bitting bridle (*Figure 3*). Now put on the harness, checking him up as tight as he will bear, and apply the "long foot-strap," fastening it to the near fore-foot, bringing it up under the girth; take hold of the reins and foot-strap, and start him along, pulling up the foot frequently and stopping him, saying, "whoa!" as you pull up, turning him occasionally about; then change sides with the strap, and repeat the operation. Take the long strap off the foot, tie it round the neck, and pass it along the near side of him, and put it between his hind-legs, holding the near fore-foot in your left hand, to avoid being hurt. Drop the fore-foot and

bring the strap back around the near hind leg, close up to the body, on the near side, and pass it through the part tied around the neck, and commence drawing this up. He will probably cringe and be frightened; keep hold of the bridle well up to the head, with your left hand. Keep tightening the strap until he allows you to pull up his hind-leg without struggling; then change to the other hind-foot, repeating the same process. This should be repeated two or three times, if he is very spiteful. When completed, the colt is then ready to hitch up with another horse. Hitch him up on the side on which he is in the habit of kicking, with the "long strap" around the inside foot, and held with the reins. Walk him along, driving straight ahead, pulling up the foot and stopping him occasionally. Then begin turning him, doing it quickly, and managing to have the pole hit him, at the same time pulling up on the foot, but compelling him to go around. If afraid of the trace, change sides with the strap. This should be kept up for about ten minutes at a time. If the habit should continue, repeat this a few times, when he will recover from it.

PULLING AT HALTER.

(See *Figure 7.*)

Place on him a common halter head-stall. Put on a common girth. Take a half-inch rope about twenty feet long. Pass the center of this rope under the tail in place of a crouper; twist the rope over a couple of times; pass the ends of the rope under the girth, bringing an end up on each side of the neck; and pass the ends through the nose-piece of the head-stall, under the check-pieces, and tie to a stout ring or place, leaving about three feet play of rope. As soon as the horse pulls back, he being tied by the tail to the ring, he pulls upon the tail (*see Figure 7*), and the hurt coming there instead of the head, where he expected it, he starts up, it being natural to go *from* the hurt. In fact, any plan



which brings the pull in the rear, either upon the tail or leg, will do the business. Your own ingenuity will devise several ways to accomplish this, but we consider tying to the tail the safest, as there is no danger attached to it; and if he is in the habit of pulling nights, this arrangement may be left on without fear of the horse getting tangled in the rope, as there would be if tied to the leg. Common-sense will show that as there is no pull upon the head, and consequently no hurt there, he will soon cease pulling, and lose the habit. To make the lessons effective, you may cause him to pull by using such exciting means as are apt to alarm him.

BRIDLE-PULLING.

Put a rope on the tail in the same manner as in halter-pulling, except that you pass the ends through the rings of a bridle, and tie them to a post where the horse is in the habit of pulling, unhitching the wagon, if one is attached. Step away, and frighten him by means of a wheelbarrow or whatever is apt to alarm him, causing him to pull. As he pulls, the pressure coming upon the tail, he will step up to the post. Take hold of

the rope between the post and his head, and give it a few pulls back and forth. By this means he will learn to step forward rather than to pull back. After a few lessons he may be tied with a common tie-strap, the end, however, passing through the ring of the bridle-bit, and being tied to the back-strap. Do this until you are satisfied you have effected a cure.

HOW TO THROW A HORSE.

The easiest and most effectual method of throwing down a horse is to strap up the near side fore-foot; put on a surcingle, with a ring fastened to the top of the surcingle; tie a half-inch rope around his neck in the same manner you would to hitch him

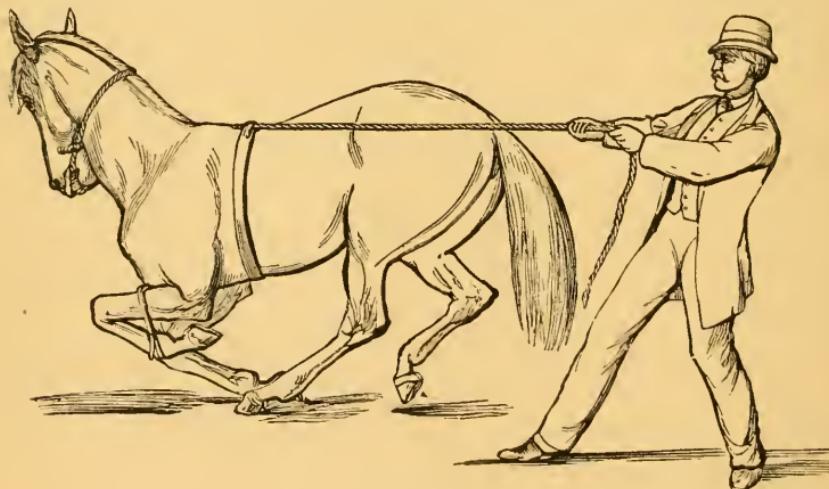


Figure 8.

by the neck; place it up near the throat-latch, with the knot on the near side of the face; pass the rope through the mouth, and bring it along his neck on the off side, and pass it through the ring on the back; standing back on the near side, about six or eight feet from the horse, opposite his near side hind-leg, drawing the rope sufficiently tight to keep it in the mouth. Pull carefully until he yields his head a little to the off side; then give a sharp, strong pull, and, keeping your hold, pull strongly until he

is down (*see Figure 8*), which will occupy from one to five seconds. As he goes down, lying upon the near side, you keep the rope tightened, and he cannot get up. By repeating this, you will soon make him quite a trick-horse, as he will learn to lie down by simply pulling upon the off bridle-rein. Throwing is often necessary in surgical operations, and as the horse may be thrown on either side, and with perfect safety, by this plan, we consider it preferable to the former way of throwing him by main strength.

A JUMPING RIG.

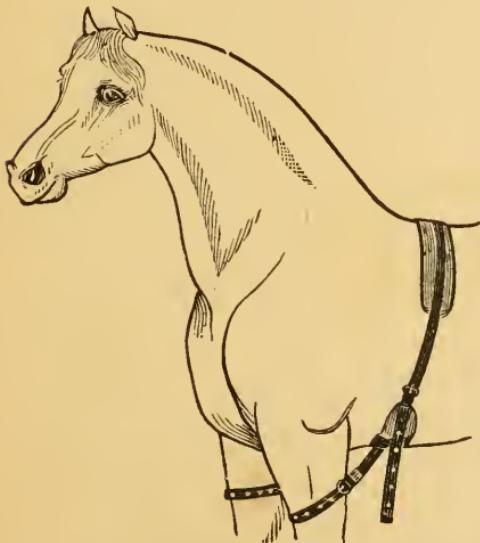


Figure 9.

This cut represents a horse with a surcingle on, and two straps around the fore legs or fore arms. This is to stop horses, cattle, or sheep from jumping fences or running in the pasture when you want to catch them. This is plain, simple, and cheap. It will cost, at any harness shop, \$1.25 to make it, and the horse cannot go over a fence two feet high. To make it, take any com-

mon surcingle, sew on, near the buckle, a strap to hold a ring one inch in diameter; then go fourteen inches on the surcingle, and sew on another strap and ring; then take two straps one inch wide, two feet three inches long, with buckles on, and put them through the rings and around the legs, and you have a complete rig to stop any animal from jumping. They can eat, walk, lie down, and get up, but cannot jump. Try it.

THE AGE OF THE HORSE.

THE age of the horse not only adds importance to its power of endurance and services, but also influences the value of the same; it is therefore of great importance to know the exact age, and especially as the nippers, whose cutting, alternation, and whose transfer takes places at certain periods, and serves as a guide to ascertain with certainty the age up to the eighth year; for this reason a knowledge of the dentition of the horse is invaluable. There are, to be sure, certain other points in distinguishing the exact age, for instance, at somewhat advanced age a sprinkle of white hair on the eyebrows and forehead, the sinking of the hollow over the eyes, the throat passage sunken and strongly marked, etc., and yet these changes are sometimes wrought by circumstances, which makes it often impossible to ascertain the exact age.

The teeth are composed of substances: the dentine (d), also called ivory substance; the enamel (e), and the bone substance (c), cement. Figure 1 gives the three formations in their natural size. The stallion has 40 teeth, viz., 24 molars, 12 incisors and 4 tushes; the latter are missing in the mare, therefore leaving but 36. The 6 incisors form a half circle in both the upper and lower jaw, set in an even row, closing one over the other; they serve to grasp and bite off the food. The tushes stand isolated in their places, thus in the space existing between the incisors and molars, still nearer the incisors; they do not, however, touch close on each other, as the tushes of the under jaw are

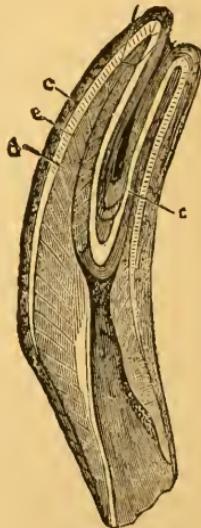


Fig. 1, Section of Incisor.

set further forward than those of the upper jaw. The molars stand six in each side of the jaw, close together, form an even surface and close on each other; they are four-cornered with the exception of the foremost and last of each row, being more of a three-corner shape; they serve to crush and chew the food; whereupon the surface is rough and uneven.

Of these teeth, and foremost the nippers of the lower jaw, are used to establish the age of the horse, as the molars cannot be so easily examined, and as also the tushes, do not undergo such changes as the nippers.

Still, before proceeding further in the description of the transformation of the teeth, it will be necessary to so examine the classification and nature of the teeth.

In each tooth there is a distinction between the root, the neck and crown of the same. In the center of the nippers may be found, still to a certain age, long round black cavities, with a somewhat upraised gleaming white edge, which are called marks, which after awhile wear off; these marks are particularly considered the best judgement of the horse's age.

Further on we make a distinction between the milk teeth, temporary teeth and permanent teeth. The milk or foaling teeth are smaller and frailer, and often exist before birth, or in the earliest infancy of the colt. These foal teeth soon fall out and the temporary teeth make their appearance; to these belong the several incisors and the three first molars in each row, making in all 12 incisors and 12 molars.

Permanent teeth are termed those which are never exchanged for the space of life; to these belong the three last molars in each row and the four tushes.

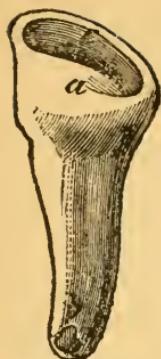


Figure 2.

In form, size and color the milk nippers differ from the permanent nippers. The first display the crown (a), and the root (b), (*see Figure 2.*) The crown appears above the flesh, with a grinding surface (c), which is oval and having in its center a cavity $\frac{1}{6}$ of an inch in depth, which is called mark. As the edges wear off in grinding, this mark disappears gradually, until at last entirely lost to view. The color of the crown of the foaling teeth is either a faint white or of a yellowish tint.

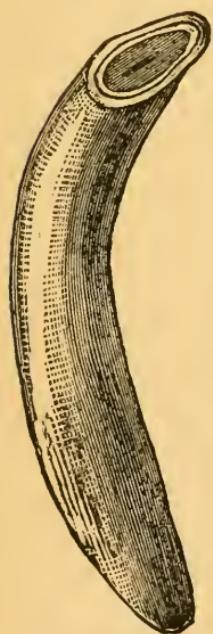


Figure 3.

The incisors of the matured horse are decidedly longer and thicker than are the milk teeth, they are set more oblique, have more of a yellowish tint, and the outer surface indented with a long groove (*see Figure 3*), which is deeper and of a darker tone than in the milk teeth. As in the latter, so have also those of the fully developed horse a grinding surface; cavities or marks are also found in the permanent, although deeper. The tushes (*see Figure 4*), are cone-shaped and pointed at the end, with a somewhat outwardly inclined crown; in the young animal they are hollow, but gradually become filled with bone substance (cement), and appear to an advanced age equally sustained.

They wear off continually, so that at 12 to 15 years the crown is almost entirely obliterated.

The age of the horse is recognized by: the falling out or decay of the milk teeth, the transformation of the teeth, and the natural change which they undergo.



Figure 4.

At its birth the foal is already possessed of twelve molars, and often both anterior incisors have put in appearance; but, as a rule, the latter are cut in the first ten days after birth. In the next four or six weeks the central nippers break through, and from the sixth to the ninth month the corner nippers have also come forth. Each of these nippers have on their grinding surface a mark which after awhile disappears in consequence of the intervening teeth, and coming in contact with their opposites, are naturally worn off. This disappearance of the mark on the anterior nippers follows after the expiration of the first year, on the central nippers at one and one-half years, and on the corner nippers at the end of the second year; therefore in the two year old foal the marks of the milk teeth have entirely disappeared.

The growth of the foaling-teeth has thus ended, and under these are formed the so-called temporary teeth. The foaling-teeth have fallen out, and the transformation of the teeth begins. With $2\frac{1}{2}$ years the changing of both the anterior nippers and the first molar of each row takes place. After another half year, being the third year, both central nippers have so far advanced as to come in grinding contact with those of the opposite jaw, and at the same time the second molar in each row is transplanted. In three and one-half years the central nippers and third molar in each row are cut, but not until the expiration of the fourth year do the central nippers meet. With $4\frac{1}{2}$ years the corner nippers are cut, which, with five years, come in mutual contact. There are thus several nippers cut and in use, and it is said "the horse has shed all his teeth."

Further, with $1\frac{1}{2}$ years appears the fourth molar, with $2\frac{1}{2}$ years the fifth, and with $4\frac{1}{2}$ years the sixth molar. The tushes are shed between the fourth and fifth years. They are at first pointed, with sharp edges, and in the sixth year fully developed; after the eighth year, they gradually wear off. During the space of five years the transforming and shedding of teeth has been completed, and the horse, then also (as a general rule), fully

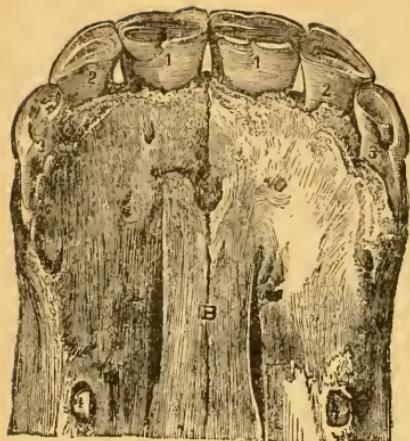
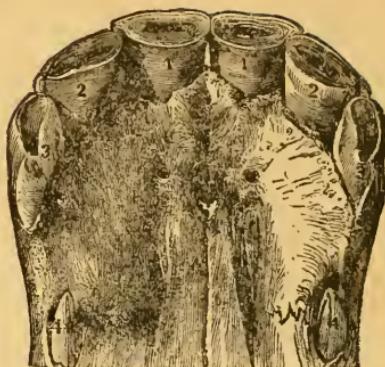


Fig. 5. Three-year old Mouth.

1. 1. Central permanent nippers, nearly full grown.
2. 2. Milk teeth worn down.
3. 3. Corner milk teeth, showing central mark.
4. 4. Tushes concealed within the jaw.

Fig. 6. Mouth of the Colt at $4\frac{1}{2}$ years.

1. 1. Central nippers, considerably worn down.
2. 2. The next pair, fully developed, with their edges slightly worn down.
3. 3. Permanent corner nippers, in a state of growth, with the edges of the cavity sharp, and the mark very plain.
4. 4. The Tushes showing themselves through the gum, but not full grown.

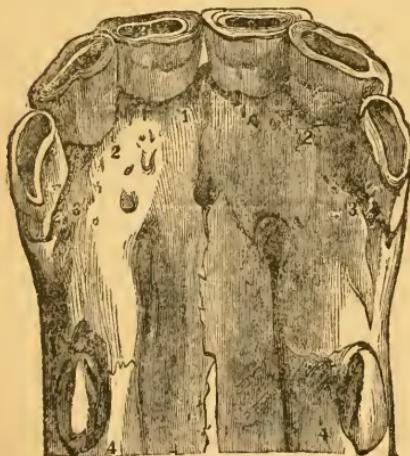


Fig. 7. Upper Nippers and Tushes at five years old.

1. 1. Central nippers, with the mark still unobliterated.
2. 2. Next nippers, with the mark still plainer.
3. 3. Corner nippers, with the edges very slightly worn.
4. 4. Tushes, well developed and still showing the groove on the outside plainly.



Fig. 8. Lower Nippers and Tushes at five years old.

1. 1. Central nippers, with their marks almost entirely worn out.
2. 2. Next nippers, marks partially worn.
3. 3. Corner nippers, with the mark plainly seen, edges somewhat worn.
4. 4. Tushes, with the grooves inside almost obliterated.

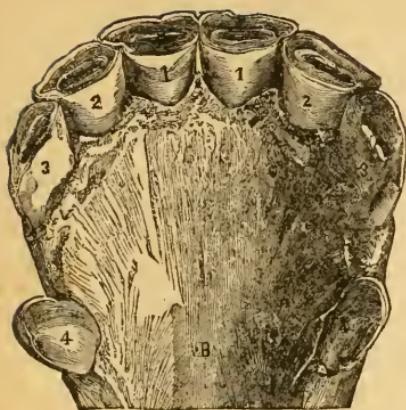


Fig. 9. The lower teeth of a six year old horse.

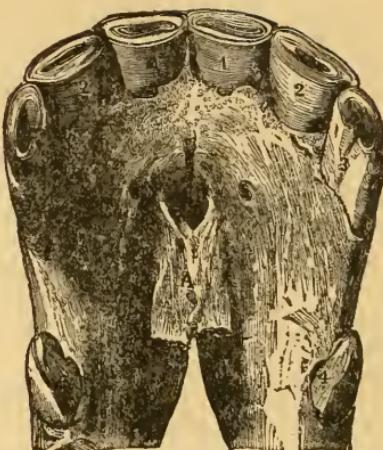


Fig. 10. At seven years old.

1. 1. Central nippers, with the marks worn out.
2. 2. With the marks disappearing.
3. 3. The corner nippers, showing the mark plainly enough, but with the edges of the cavity considerably worn.
4. 4. The Tushes protruding $\frac{3}{4}$ of an inch, with their points only slightly blunted

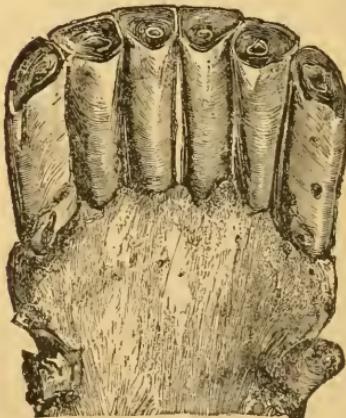


Fig. 11. At nine years.

developed. As has been shown thus far, the age of the horse is judged up to his fifth year by his dentition; after the fifth year, however, the age can be ascertained only by the wearing off of the nippers and the necessarily following changes of the grinding surface; and in this instance the nippers of the *lower* jaw are principally taken into consideration, the wearing off of the upper jaw having no set time. On both inner nippers, the marks disappear after the sixth year. With the seventh year, the marks of central nippers disappear, and with the eighth year the corner nippers, so that in the eighth year the marks are all worn down. A peculiar change takes place the ninth year in the corner nippers of the upper jaw, inasmuch that not wholly coming in contact with those of the lower jaw, in consequence of an expanding of the latter jaw, which happens in the seventh year, a sharp corner is left in the upper corner nipper; it begins with the eighth year, is most conspicuous in the ninth year, but is gradually lost sight of with the eleventh year. Up to the eighth year a knowledge of the exact age of the horse is not attended with much trouble, but in later years it doubles in uncertainty and a correct statement of the age cannot be ascertained. It can then be given only within two or three years of the age, judging by the form or surface of the nippers and the length of the teeth in general.

The period of teething is for the development of the horse of great importance. Particularly during the time of shedding the corner nippers, which are followed almost immediately by the tushes, should the horse therefore be treated with the greatest consideration. The pain during the transformation is sufficient cause for its lack of nourishing, and effected head, etc.; and if the animal is fed on indigestible food, used hard, exposed to every temperature, it is not to be wondered at, that just in this time the foundation of many ills horse is habitual to, is laid, namely, brain affections, inflammation of the brain, staggers, etc. It will also be well to make mention at the present opportunity

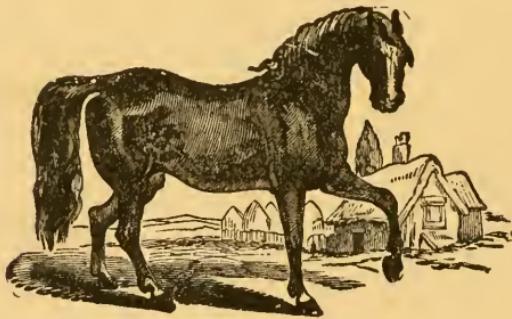
of the fraud practiced in the teeth. As before said, the age of the horse influences in a great measure the value of the same; and for this reason the nippers are fraudulently tampered with, to make the horse appear either younger or older, as the case may be. The proceeding to age the horse lies in the pulling out of the foaling teeth sooner than their natural transformation will permit of, in this manner to convince the purchaser the horse has already transferred his foaling teeth.

In most cases, the pulling out occurs with the corner teeth, which are taken out as soon as the central nippers are exchanged, thus making the horse appear four and one-half years old, and given out for five years, when it is actually only three and one-half years old. It is nevertheless an easy matter to discover this treachery, for a close observation will show that the temporary tooth has not yet put in an appearance in the hollow left by the pulling out of the corner nipper, and which is always seen when allowed to take a natural course, the flesh round the pulled nipper is very much inflamed and grown over the cavity; as a rule the corner nippers of the lower jaw are pulled, whereas those of the upper jaw are foremost in their transfer, and in this wise also may the trickery be brought to light. Yet more frequent is the case to make the horse appear younger than he really is, and this is brought about by fraudulent negotiations in horses, that on the grinding surface of the nipper, where the natural mark has long since disappeared, a new indentation is engraved and darkened with a cauterized acid—in this way an artificial mark is effected. The term applied to this mode is “bishoping.” This bishoping is either done on all the nippers of the lower jaw, or on certain ones, especially on the corner nippers, through which the horse appears to be but from seven to eight years old. However, this open trickery is soon detected, since the natural mark is surrounded by an elevated, white, polished rim, while the artificial marks lack this feature, and it

is just herein that fraudulent horse-dealers have been unable to imitate nature.

The fraud is more difficult to detect, not when new marks are engraved, but when the depth of the natural cavity of the teeth is increased, thus giving it a closer resemblance with a natural mark, and in this case it is possible to pass a twelve year old horse for one aged only seven or eight.

Nevertheless, the shape of the grinding surface, the position of the teeth and the condition of the tushes must hereby be taken into consideration.



BY-LAWS

OF

"THE NATIONAL TROTTING ASSOCIATION."

IN FORCE FROM AND AFTER FEBRUARY 12, 1880.

ARTICLE I.

NAME.

SEC. 1. This Association shall be known under the name of THE NATIONAL TROTTING ASSOCIATION."

ARTICLE II.

OBJECT.

SEC. 1. This Association shall have for its object, the improvement of the breed, and the development of horses, through the promotion of the interests of the American Trotting Turf ; the prevention, detection, and punishment of frauds thereon ; and uniformity in the government of trotting and pacing.

ARTICLE III.

OFFICERS.

SEC. 1. The officers of this Association shall consist of a President and two Vice-Presidents (to be designated as First and Second Vice-Presidents), and a Secretary and Treasurer. The duties of the Secretary and Treasurer may be discharged by the same person.

ARTICLE IV.

PRESIDENT.

SEC. 1. The President shall be *ex-officio* a member of the Board
(145)

of Review and District Boards, and when present shall preside at all meetings of the Association and the Board of Review and District Boards, and he shall have the casting vote at such meetings ; and whenever, upon verified written petition, he shall believe there is injustice or illegality in any penalty imposed by an associate member, he may temporarily remove or modify the same until a meeting of the proper Board having jurisdiction of the matter. [See also Art. 7, Sections 3 and 7.]

ARTICLE V.

VICE-PRESIDENTS.

SEC. 1. The Vice-Presidents shall be *ex-officio* members of the Board of Review and District Boards ; and, in the absence of the President, they shall preside at meetings of the Association, and Board of Review and District Boards, which duty shall devolve by seniority upon the first Vice-President, and, in his absence, upon the second.

ARTICLE VI.

SECRETARY AND TREASURER.

SEC. 1. It shall be the duty of the Secretary, when present, to act as Secretary at all meetings of the Association and Board of Review and District Boards. He shall keep a record of all the proceedings of such meetings, and, by order of the President, call all meetings of the Association and Boards, and he shall attend to all correspondence relating to the affairs of the Association. He shall, from time to time, publish, or furnish each associated course with a written or printed report of the proceedings of meetings of the Association and Boards, and at the close of each year he shall compile and arrange a complete list of persons and horses under penalty of suspension or expulsion, and such other matters of record as he shall deem of interest and service to the Association. Of the matter so prepared, at least one printed copy shall be supplied to each of the associated courses.

SEC. 2. The Treasurer shall receive and take charge of all moneys that may belong to the Association, and make therefrom such payments as shall have been ordered by the Committee on Disbursements, or by the Board of Review, of which a statement in detail shall be submitted at the end of the year or when required by the Board of Review.

ARTICLE VII.

BOARD OF APPEALS.

[Including Board of Review and District Boards.]

SEC. 1. The Board of Appeals shall have general management, control, and superintendence of the affairs of this Association, subject to the Rules, Regulations, and By-Laws. [See Sections 7 and 9.]

SEC. 2. To the Board, through the Secretary, must be addressed in writing all charges against any member of this Association, or other communications intended for their action.

SEC. 3. The Board shall examine all evidence of fraud, or any other matter relating to the turf, that is brought before them, and shall take such measures to ascertain the truth or falsity of all charges as they shall deem necessary and proper, and they shall pass judgment in each case ; and they shall have authority to fine, suspend, or expel any member who shall refuse or fail to obey the laws of this Association, or the orders of the Board ; and any member failing to pay a fine so imposed may be suspended until such fine is paid ; *provided*, that such fines shall not in any single case exceed \$100. And it is *further provided*, that the President, upon complaint made, and after ascertainment of the truth thereof, that a member has failed to pay premiums won, for more than ten days, shall order such member to be suspended until such premiums be paid or deposited with the treasurer of the National Association.

SEC. 4. The Board of Appeals shall consist of not more than fifteen members, besides the President and Vice-Presidents, to be chosen as hereinafter provided.

SEC. 5. As a part of the system established under these by-laws, there shall be, and there are hereby created, five judicial districts, as follows :

District No. *One*, to be known as the "Eastern District," composed of the New England States and the Dominion of Canada, having for its place of meeting the City of Hartford, Conn.

District No. *Two*, to be known as the "Atlantic District," to be composed of the States of New York, Pennsylvania, Delaware, Virginia, New Jersey, Maryland, and the District of Columbia, having for its place of meeting the City of New York.

District No. *Three*, to be known as the "Central District," composed of the States of Ohio, Indiana, West Virginia, Kentucky, Missouri, Arkansas, Louisiana, and all of the States south

of the southern border of Virginia and Kentucky, having for its place of meeting the City of Cincinnati, O.

District No. *Four*, to be known as the "Western District," composed of the States of Illinois, Wisconsin, Minnesota, Michigan, Iowa, and Texas, and all the Western States and Territories not included by name in this or other districts, having for its place of meeting the City of Chicago, Ill.

District No. *Five*, to be known as the "Pacific District," composed of the States of California, Oregon, and Nevada, having for its place of meeting the City of San Francisco, Cal.

SEC. 6. Three members of the Board shall be chosen in each judicial district, who shall constitute a DISTRICT BOARD for such district, of which Board the President and Vice-Presidents shall be *ex-officio* members.

SEC. 7. The President shall, from time to time, select one of the three members of the Board in each judicial district to be chairman of the Board for such district; and the five chairmen thus chosen shall constitute a BOARD OF REVIEW, of which the President and Vice-Presidents shall be *ex-officio* members. After a meeting of the Board of Review, and before another meeting of that Board, the President shall again select the chairman in each of the said five districts, changing the chairman in each district when practicable. The President may act as referee in any case wherein the parties thereto so request, and in such case his decision shall be final.

SEC. 8. Each of said District Boards shall have jurisdiction on all questions of fraud or other matters relating to the turf, arising in said district. [See Rule 26, Sec. 1, Rule 51, Sec. 4, and Rule 52, Sec. 2.]

SEC. 9. The Board of Review shall possess the authority conferred upon the Board of Appeals, and may perform any of the offices and duties which, under the By-Laws and Rules, devolve upon said Board of Appeals. They shall hear all appeals from the decisions and rulings of the District Boards, and they may hear appeals from the decisions and rulings of the judges of any race, and of the several associate members, and they shall pass judgment in each case, from which there shall be no appeal. [See Rule 26, Sec. 1, Rule 51, Sec. 4, and Rule 52, Sec. 2.]

SEC. 10. Each District Board shall meet upon the call of its chairman, or of the President. In all meetings of a District Board, two members, exclusive of the *ex-officio* members, shall be a quorum for business.

SEC. 11. The Board of Review shall hold a meeting on the

first Tuesday of December, 1880, in the City of New York ; and thereafter shall hold a regular meeting on the first Tuesday of December in each year, at such place as they shall determine : *provided*, that if the Board shall, at its first, or any regular meeting, omit to determine the place of its next meeting, the President shall designate the place. In all meetings of the Board of Review, three members of the Board, exclusive of the *ex-officio* members, shall constitute a quorum for business. Special meetings of the Board of Review shall be held, when ordered by the President.

SEC. 12. In all meetings of either District Board or the Board of Review, notice shall be sent to the members of the Board by the Secretary, through the mail, not less than fifteen days prior to the meeting.

SEC. 13. All petitions, appeals, or applications to be considered by either District Board, shall be lodged with the Secretary of this Association, and shall be accompanied by a payment of \$10 for costs, the costs to go to the National Association ; but no costs shall be charged for supplemental proceedings in the same matter. Neither shall any costs be charged for appeals to, or other proceedings before, the Board of Review.

SEC. 14. Re-hearings may be granted by each District Board, for causes which such Board shall deem sufficient, in any matter upon which said District Board has acted, and in such cases new evidence may be introduced : but in appeals to the Board of Review, no new evidence shall be introduced. And in such appeals, the parties may file briefs, and may be heard by argument in writing, and when so heard, the papers in the case may be submitted by order of the President to the several members of the Board, for their action, without requiring them to assemble at a special meeting. In any such case, if a tie shall occur in the vote or decision of the members, the President or one of the Vice-Presidents shall cast the deciding vote.

SEC. 15. No member of a District Board, having sat in the hearing of a case coming before such District Board, shall be allowed to vote or decide upon the same case arising in the Board of Review.

SEC. 16. There shall be a Committee of Disbursements, consisting of the President and two members of the Board of Appeals, to be appointed by the President. Said committee shall direct and audit all disbursements of moneys of the Association.

SEC. 17. The Board of Review shall have power to call a special congress whenever by them deemed necessary. [See Art. 15.]

SEC. 18. Each member of the Board of Appeals shall be entitled to the privilege of honorary membership on the grounds and premises of all the associated courses. [After February, 1880, this provision will not include the privilege of the Judges' stand.]

ARTICLE VIII.

DELEGATION.

SEC. 1. A delegation to a general congress or any Association meeting shall consist of one person, duly authorized in writing by the President or Secretary of their respective associations, or proprietor or proprietors of individual courses. [See also Art. 14.]

ARTICLE IX.

ADMISSION OF MEMBERS.

SEC. 1. All applications for admission to membership in this Association must be made in writing, duly signed, and addressed to the Secretary, for action of the Board of Review, who may admit or reject the applicant: *provided*, that in the interval between meetings of the Board the new members shall be admitted when sanctioned by the President, but always subject to the approval or rejection of the Board at its next meeting.

ARTICLE X.

ANNUAL FEE OF MEMBERSHIP.

SEC. 1. The fee of membership shall be determined by the Board of Review, and shall be payable on or before the first day of April in each year.

ARTICLE XI.

FORFEITURE OF MEMBERSHIP.

SEC. 1. An association or proprietor, having once been admitted, shall continue a member upon the prompt payment of dues for the succeeding year, unless suspended or expelled by order of the Board of Appeals, for a violation of the Rules and Regulations or By-Laws of this Association, or for other cause. [See Art. 7. Sec. 3 and Sec. 9.]

ARTICLE XII.

DUTIES OF MEMBERS.

SEC. 1. It shall be the duty of each associate member to see that the Rules, Regulations and By-Laws of this Association are rigidly enforced upon their respective courses, under penalty of suitable fines or expulsion.

SEC. 2. Members shall not allow their courses to be used for exhibitions of a character degrading to the public standing of the National Trotting Association, and they shall be held responsible before the Board of Appeals for any violation of the Rules of this Association. [See Art. 7, Sec. 3 and Sec. 9.]

SEC. 3. They shall keep on file, for future reference, all letters, entries and communications relating to their respective courses.

SEC. 4. It shall be the duty of each member to furnish the Secretary of said National Association, *within ten days of the close of each meeting*, a review containing an official summary of all races upon their respective courses, said summary to contain the date, the amount or value of the purse, match, or sweepstake, the full terms and conditions of the race, lists of such entries as they have received, the position of each and every horse in each heat, the drawn, distanced, and ruled-out horses, the official time of each and every heat, the names of the judges, and such notes and remarks as are necessary for an understanding of the whole.

SEC. 5. Members shall furnish to the Secretary the names of all persons and horses that have been fined, suspended, or expelled, together with the amount of fines and term of suspension. They shall also furnish a list of the officers of their respective associations or courses, with their post-office address. [See Sec. 2, of Rule 3, requiring action within one week of the meeting when suspension is imposed, for non-payment of dues. See also Sec. 6 of Rule 51, for further requirements regarding penalties.]

ARTICLE XIII.

CLERK OF THE COURSE.

SEC. 1. It shall be the duty of each member to provide the services of a competent person to assist the judges in each and every race upon their respective courses, who shall be styled the Clerk of the Course.

SEC. 2. He may, at the request of the judges, assist in weighing riders or drivers, assigning the position of horses before the race, or other similar duties, and shall keep a book in which shall be

recorded a description of the dress or colors worn by each rider or driver, and the weight carried ; he shall note the time when a heat is finished, and shall notify the judges, or ring the bell, at the expiration of the time allowed between heats ; he may assist the judges in placing the horses at the finish of the heat.

SEC. 3. He shall record, in a book to be kept for that purpose, an account of every race, in the following form, to wit : First, all horses entered and the names of the riders or drivers ; next, the starting horses and the positions assigned them ; next, a record of each heat, giving the position of each horse at the finish ; then, the official time of each heat, and, at the end, an official summary of the race, giving the drawn, distanced, and ruled-out horses, if any there be. He shall record all protests, fines, penalties, and appeals. This book shall be signed by the judges, and shall constitute the official record. [See also Rule 43, Sec. 1.]

ARTICLE XIV.

MEETINGS.

SEC. 1. There shall be a meeting, or Congress of the members of this Association, biennially, on the second Wednesday in February, at such place as may be chosen at the meeting next preceding ; a written or printed notice of each meeting shall be mailed, postage paid, and addressed by the Secretary to each member, at least thirty days prior to such meeting. [See also Art. 15, Sec. 1.]

SEC. 2. Each member shall be entitled to one vote, and may vote by a delegate duly authorized, who shall have the power of substitution. [See also Art. 8.]

ARTICLE XV.

SPECIAL MEETINGS.

SEC. 1. Special meetings of the Association shall be called by the Secretary whenever requested by the Board of Review, or in writing by a majority of the members, and fifteen days' notice shall be given by the Secretary to each member of the time and place of holding any special meeting, in the manner provided for notice of biennial meetings. [See Art. 14, Sec. 1.]

SEC. 2. One-fourth of the members shall be represented to constitute a quorum for the transaction of business in any special meeting. [See also Art. 8.]

ARTICLE XVI.

ELECTION OF OFFICERS.

SEC. 1. The President, Vice-Presidents, and Board of Appeals shall be chosen at each biennial meeting of the Association, and shall retain their respective offices until their successors are appointed.

SEC. 2. In case of the resignation or death of any of their members, the Board of Appeals shall have power to fill vacancies until the next election. [See Art. 7, Sec. 9.]

SEC. 3. The Secretary and Treasurer shall be elected by the Board of Review, and he or they shall hold office until a successor is appointed.

ARTICLE XVII.

FINES.

SEC. 1. All fines shall revert to the National Trotting Association, and shall, upon collection, be immediately paid to the Treasurer. And no fine shall be removed or modified unless by order of the Board of Review.

SEC. 2. Any member failing to report and make returns for fines collected shall be liable to a fine to be imposed by the Board of Review. [See Rule 49; also Rule 52, Sections 1 and 3.]

ARTICLE XVIII.

LENGTH OF TRACKS.

SEC. 1. All members of this Association shall furnish the Secretary with the statement of a competent civil engineer, who shall certify, under oath, the exact distance of their respective tracks, measured just three feet from the pole—that is to say, from the inside fence or ditch. These certificates shall be endorsed by the proper officer of the course designated, and shall be placed upon the records of this Association.

ARTICLE XIX.

BY-LAWS.

SEC. 1. Each Association may be governed by its own By-laws, provided they do not conflict with these, or with the Rules and Regulations adopted by this Association.

ARTICLE XX.

SUPERVISORS.

SEC. 1. The President may employ a trusty man, or men, to visit any trotting meeting or meetings to learn if the Rules of this Association are properly observed, and to take the time of the horses in any heat or heats trotted or paced at such meeting. Such supervisor or supervisors shall have authority to inspect the records and the entries in possession of any member when so directed by the President. The report of such supervisor or supervisors as to said matters shall be received by the Board of Review as evidence in any investigation by the Board relating thereto.

SEC. 2. Any member or the judges of any member, or any party, thus reported guilty of violating said Rules, shall be by the President reported to said Board.

A true copy from record, February 12, 1880.

Attest:

JNO. J. VAIL,
SECRETARY.

RULES AND REGULATIONS OF “THE NATIONAL TROTTING ASSOCIATION.”

[TO GOVERN ALL ENGAGEMENTS AND PERFORMANCES OVER
THE ASSOCIATED COURSES.]

ENACTED BY THE NATIONAL TROTTING ASSOCIATION AT THE CONGRESS HELD IN THE
CITY OF NEW YORK, FEBRUARY 12, 1880.

RULE 1.—MANDATE.

SEC. 1. All trotting and pacing engagements and performances over the several courses which are, or shall be, represented by membership in “THE NATIONAL TROTTING ASSOCIATION,” and each and every person who shall in any way be concerned or employed therein, as well as all associations and proprietors themselves who are or shall become members of said National Association, shall be governed by the following rules from and after February 12, 1880.

RULE 2.—ENTRIES.

SEC. 1. All entries must be made in writing, signed by the person making the same, or by some one authorized in his behalf; and, within the time appointed for closing, they must be addressed and forwarded according to the published conditions, or deposited with the Secretary or other person authorized to receive them.

SEC. 2. All entries not actually received by the member as aforesaid, at the hour of closing, shall be ineligible, except entries by registered letter bearing postmark not later than the day of closing, or entries notified by telegraph, the telegram to be actually received at the office of sending at or before the hour

of closing, such telegram to state the color, sex and name of the horse, and the class to be entered, also to give the name and residence of the party making the entry.

SEC. 3. The hour for closing the entries for all purses or premiums offered by any of the associated courses shall be 11 o'clock P. M., except for stakes and purses for horses to be named at the post, the entries to which shall close at the hour fixed for the race.

SEC. 4. Nominations for sweepstakes shall not be privileged to compete unless the payments have been made as required by the conditions. And nominations for premiums may be rejected when not accompanied by the entrance money.

SEC. 5. It shall be the duty of the Secretary, or other person authorized, to prepare the list of entries for publication, comprising all information necessary for the enlightenment of the general public and parties to the race.

RULE 3.—ENTRANCE FEE.

SEC. 1. The entrance fee shall be 10 per cent. of the purse, unless otherwise specified; and any person failing to pay his entrance dues, or in stake races his declaration, forfeit, or entrance, may, together with his horse or horses, be suspended until they are paid in full, which shall be with an addition of 10 per cent. penalty, and interest at 7 per cent. per annum until paid—the penalty to go to the National Association. [See Rule 50; also Rule 51, Sec. 7; and Rule 52, Sec. 3.]

SEC. 2. After February 9, 1876, no suspension for non-payment of dues as aforesaid shall be lawful unless ordered within one week of the close of the meeting, and no suspension shall be imposed for non-payment of such dues contracted in a class wherein the horse was permitted to start.

SEC. 3. All entries shall be governed by the published conditions, and shall be bound for the entrance fee regardless of any proposed deviation from such published conditions, and any member who shall make a collusive arrangement to allow a nominator privileges differing from those allowed by the terms of the race to other entries in the same class; shall, upon satisfactory evidence thereof produced to the Board of Review, be held to forfeit to the National Association 50 per cent. of the amount of the purse in which such collusive arrangement was made, one-half of such forfeit to go to the informant upon recovery of the same, and the member, upon a second conviction of like character, shall be expelled.

RULE 4.—HOW MANY TO ENTER.

SEC. 1. In all purses three or more entries are required, and two to start, unless otherwise specified.

RULE 5.—HORSES TO BE ELIGIBLE WHEN ENTRIES CLOSE.

SEC. 1. A horse shall not be eligible to start in any race that has beaten the time advertised prior to the closing of the entries for the race in which he is entered, unless otherwise specified in the published conditions. Fractions of a second shall be considered in determining the time made, and shall be entered in the record, but they shall not operate as a bar in making entries ; that is, a horse gaining a record of 2.29½ shall remain eligible in the 2.30 class.

SEC. 2. A horse shall not be eligible if the time specified has been beaten by him at a greater distance ; that is, a horse having made two miles in five minutes is eligible for a 2.30 race, but not eligible for a race limited to horses of a slower class than that.

RULE 6.—DESCRIPTION AND NAME OF EACH HORSE REQUIRED.

SEC. 1. An accurate and sufficient description of each entry will be required, such as shall identify the animal, and shall embrace the following particulars, to wit :

[COLOR.]

SEC. 2. The color shall always be given, and when necessary to identification, the marks shall be stated.

[SEX.]

SEC. 3. It shall be distinctly stated whether the entry be a stallion, mare, or gelding, and the names of the sire and dam if known shall be given in all cases, and when unknown it shall be so stated in the entry. If this requirement as to pedigree is not complied with, the entry may be rejected ; and when the pedigree is given, it shall be stated by the member with the publication of the entry.

[NAME OF HORSE.]

SEC. 4. Every horse shall be named, and the name correctly and plainly written in the entry ; and after entering or trotting in a public race such name shall not be changed without pro-

curing a record thereof to be made in the office of the Secretary of The National Trotting Association, for which there shall be paid a recording fee of \$50, the fee to go to said National Association. For each violation of this requirement a fine of \$100 shall be imposed, together with suspension of the horse until paid, and no horse shall be thus recorded by a name that has been recorded for another horse.

SEC. 5. If a horse has ever trotted in a public race, the last name under which he or she trotted shall be given with the entry; and if the name has been changed within two years, each name he or she has borne during that time must be given; and if any horse without a name has ever trotted in a public race, mention must be made in the entry of a sufficient number of his or her most recent performances, to enable interested parties to identify the animal: *provided*, that it shall not be necessary to furnish any one association or proprietor with the same record of performances the second time during one season.

SEC. 6. In entries and nominations made after 1875, the words "no name" shall not be received as a name; neither shall such descriptive words as "bay horse," "gray mare," "unknown," etc., be allowed as names, under penalty of a fine not to exceed the entrance-fee, to be imposed on the member who violates this restriction. But this restriction shall not apply to any horse having obtained a record previous to 1876 under the name of "Unknown."

SEC. 7. A horse having once been named, shall not afterward start in a race on any associate course, without a name nor under a different name, unless the foregoing requirements have been complied with.

[DOUBLE TEAMS.]

SEC. 8. In all double-team races the entry must contain the name and description of each horse, in the manner provided for entry of single horses.

RULE 7.—IDENTIFICATION.

SEC. 1. The residence and post-office address, in full, of the person or persons in whose name an entry is made must always be given, and if the name or residence be falsely stated, for the purpose of deception, the offender shall be punished by a fine not to exceed \$100, or by suspension or expulsion.

SEC. 2. If the nominator is not the owner, then the name

and residence of the owner or owners must also be stated with the nomination.

SEC. 3. Whenever the nominator is personally unknown to the officers of the course, if required, or if his entry is protested, he shall establish his identity, and that of his horse, by sufficient references or evidence; and if the Judges are not satisfied in regard to said identity, before or after the start, all pools and bets on said horse shall be declared off, and this shall be publicly announced from the stand; and if the identity of the horse shall not be established within twenty-one days he shall be barred from winning, and any premium which might be awarded said horse which is not distributable under the rules to another horse in the race shall revert to the National Trotting Association. [See Rule 16, Sec. 8.]

RULE 8.—ENTRIES THAT CANNOT START.

SEC. 1. As many horses may be entered by one party, or as many horses trained in the same stable as may be desired, but only one that has been owned or controlled wholly or partly by the same person or persons, or trained in the same stable within ten days preceding the race, can start in any race of heats.

RULE 9.—NO PURSE FOR A “WALK OVER.”

SEC. 1. No purse will be awarded for a “walk over,” but in cases where only one of the horses entered for a purse shall appear on the course, he shall be entitled to his own entrance money and to one-half of the entrance money received from the other entries for said purse. The restriction herein as to “walk over,” shall not apply to stakes or forfeits.

RULE 10.—IN CASE OF DEATH, ENGAGEMENTS VOID.

SEC. 1. All engagements, including obligations for entrance fees, shall be void upon the decease of either party or horse, so far as they shall affect the deceased party or horse; but forfeits, also matches made “play or pay,” shall not be affected by the death of a horse.

RULE 11.—MATCH RACES.

SEC. 1. In all match races these rules shall govern, unless the contrary be expressly stipulated and assented to by the club, association, or proprietor of the course over which the race is to come off.

RULE 12.—WHEN MATCHES BECOME “PLAY OR PAY.”

SEC. 1. In all matches made to come off over any of the associate courses, the parties shall place the amount of the match in the hands of the stakeholder one day before the event (omitting Sunday) is to come off, at such time and place as the club, association, or proprietor, upon application, may determine, and the race shall then become “play or pay.”

RULE 13.—PURSE OR STAKES WRONGFULLY OBTAINED.

SEC. 1. A person obtaining a purse or stake through fraud or error, shall return it to the Treasurer of the National Trotting Association, *if demanded within one year*, by the member or by order of the Board of Appeals, or he shall be punished as follows: He, together with the parties implicated in the wrong, and the horse or horses, shall be suspended until such demand is complied with, and such purse or stake shall be awarded to the party justly entitled to the same.

RULE 14.—FRAUDULENT ENTRIES OR MEDDLING WITH HORSES.

SEC. 1.—Any person found guilty of dosing or tampering with any horse, or of making a fraudulent entry of any horse, or of disguising a horse with intent to conceal his identity, or being in any way concerned in such a transaction, shall be expelled.

SEC. 2. Any horse that shall have been painted or disguised, to represent another or a different horse, or shall have been entered in a purse in which he does not belong, shall forfeit the entrance money and be expelled.

RULE 15.—REWARD.

SEC. 1. A reward of \$50 will be paid to the person who shall first give information leading to the detection and conviction of any fraudulent entry and of the parties thereto, to be paid out of the funds of the National Trotting Association by the Treasurer, upon the decision and order of the Board of Review: *provided*, that this shall not be construed to extend protection to courses outside of this Association.

RULE 16.—PROTESTS.

SEC. 1. Protests may be made verbally before or during a race, and shall be reduced to writing, and shall contain at least one specific charge, and when required, a statement of the nature of

the evidence upon which they are based, and they shall be filed with the judges, association, or proprietor, before the close of the meeting ; and the protesting party shall be allowed to file additional charges with evidence. [See Rule 7, Sec. 3.]

SEC. 2. The Judges shall in every case of protest demand that the rider or driver, and the owner or owners, if present, shall immediately testify under oath, in the manner hereinafter provided ; and in case of their refusal to do so, the horse shall not be allowed thereupon to start or continue in that race, but shall be considered and declared ruled out, with forfeit of entrance money.

SEC. 3. But if the parties do comply, and take the oath as herein required, unless the Judges find conclusive evidence to warrant excluding the horse, they shall allow him to start or continue in the race under protest, and the premium, if any is won by that horse, shall be retained a sufficient length of time (say three weeks) to allow the parties interested a chance to sustain the allegations of the protest, or to furnish information which shall warrant an investigation of the matter by the associate member, or the Board of Appeals : *provided*, that where no action as aforesaid has been taken to sustain a protest, or to furnish information, during three weeks, the associate member may proceed as if such protest has not been made.

SEC. 4. In any heat which such protested horse shall win, the Judges shall waive the application of a distance as to all other horses, except for "fouls" defined in Rule 48.

SEC. 5. When a protest is presented before or during a race, and the parties refuse to make the prescribed oath, if the Judges believe the refusal is designed to favor a fraud, they may require the horse under protest to start or continue in the race.

SEC. 6. Any person found guilty of protesting a horse falsely and without cause, or merely with intent to embarrass a race, shall be punished by a fine not exceeding \$100, or by suspension or expulsion.

SEC. 7. When a protest has been duly made, or any information lodged with the Judges in support of a protest, alleging an improper entry or any act prohibited or punishable under these rules, the same shall not be withdrawn or surrendered before the expiration of three weeks, without the approbation of the association or proprietor of the course upon which such protest or information was produced ; and if any association or proprietor shall permit such a withdrawal of protest or information, with a corrupt motive to favor any party who shall be affected by

the same, the association or proprietor so permitting, if convicted thereof by the Board of Appeals, shall be expelled from all connection with The National Trotting Association. [See By-laws, Art. 7, Sec. 9.]

SEC. 8. Associations or proprietors shall be warranted in withholding the premium of any horse, during the time herein mentioned, without any formal protest, if before it is paid they shall receive information in their judgment tending to establish fraud, the premiums withheld under this rule to be forthwith sent to the Treasurer of said National Association and by him to be retained, awaiting the result of an investigation by the member or by the Board of Appeals. [See Rule 7, Sec. 3.]

SEC. 9. The oath required in answer to protest shall be in the following form, to wit :

I.....of.....in the County
of.....State of.....on oath
depose and say that I am the.....of the
.....called.....the same entered
in a purse for horses that have never trotted better than
.....minutes and.....seconds,
to be trotted this day on this course, and the same that has
been protested, and to which protest this affidavit is in answer,
hereby declare and affirm that to the best of my knowledge and
belief said before-mentioned horse is eligible to start or compete
in the race aforesaid ; and that I fully believe all the provisions
and conditions required in the rules and regulations for the
government of trials of speed over this course were fully and
honestly complied with in making the entry aforesaid.

Given under my hand at.....this.....
day of.....A.D. 188..
.....

Subscribed and sworn to before me, this.....
day of.....A.D. 188..
.....

Justice of the Peace.

[NOTE.—In the absence of a Justice of the Peace, if this oath be administered by an officer of the association, or one of the Judges of the race, it will be considered sufficient for the purposes of the National Association.]

RULE 17.—WHEN HORSES SHALL NOT BE DRAWN.

SEC. 1. No horse shall be drawn except by permission of the

Judges of the race, unless at or before seven o'clock P. M. of the day preceding the race (omitting Sunday), the proper party shall have lodged with the President, Secretary, or proprietor of the course, a written notice, or notice by telegraph, of his intention not to start, after which notice the horse so drawn shall be ineligible to start in the race. For a violation of the requirement herein, a fine not to exceed \$100, or suspension or expulsion shall be imposed, the penalty to apply to both the horse and the party who violates the regulation.

SEC. 2. Parties having two or more entries in one race shall elect which they will not start, and notify their decision at the same time, in the same manner, and under the same penalty as provided above.

RULE 18.—POWER OF POSTPONEMENT.

SEC. 1. In case of unfavorable weather, or other unavoidable cause, each association or proprietor shall have power to postpone to the next fair day and good track (omitting Sunday) all purses or sweepstakes, or any race to which they have contributed money, upon giving notice thereof; and they may exercise this power before or after the race has commenced. [See also Rule 19.]

RULE 19.—NO TROTTING AFTER DARK.

SEC. 1. No heat shall be trotted when it is so dark that the gait of the horses cannot be plainly seen by the Judges from the stand, but all such races shall be continued by the Judges to the next fair day (omitting Sunday), at such hour as they shall designate.

SEC. 2. In all purses, matches, and stakes, the above rule shall govern, unless otherwise especially agreed between the parties and the association or proprietors.

RULE 20.—WEIGHTS AND WEIGHING.

SEC. 1. Every horse starting for purse, sweepstake, or match, in any trotting or pacing race, shall carry, if to wagon or sulky, 150 lbs., exclusive of harness; and if under the saddle, 145 lbs., the saddle and whip only to be weighed with the rider.

SEC. 2. Riders and drivers shall weigh in the presence of one or more of the Judges previous to starting for any race, and after each heat shall come to the starting stand, and not dismount or leave their vehicles without permission of the Judges, and

those who are deficient in bodily weight shall be re-weighed after each heat. Any rider or driver not bringing in his required weight shall be distanced, unless such decision shall be deemed to favor a fraud. But a rider or driver thrown or taken by force from his horse or vehicle, after having passed the winning-post, shall not be considered as having dismounted without permission of the Judges, and if disabled may be carried to the Judges' stand to be weighed, and the Judges may take the circumstances into consideration and decide accordingly. And the riders or drivers who shall carry during the heat and bring home with them the weights which have been approved or announced correct and proper by the Judges, shall be subject to no penalty for light weight in that heat: *provided*, the Judges are satisfied the mistake or fault was their own, and that there has been no deception on the part of the rider or driver who shall be deficient in weight; but all parties shall thereafter carry the required weight.

RULE 21.—HANDICAPS AND MISCELLANEOUS WEIGHTS.

SEC. 1. In matches or handicaps, where extra or lesser weights are to be carried, the Judges shall carefully examine and ascertain before starting, whether the riders, drivers, or vehicles are of such weights as have been agreed upon or required by the match or handicap, and thereafter the riders and drivers shall be subject to the same penalties and conditions as if they were to carry the weights prescribed by the rules

RULE 22.—WHEN RIDERS AND DRIVERS ARE OVER-WEIGHT.

SEC. 1. If the bodily weight of any rider or driver shall be found to exceed that which is prescribed in the rules, or that which is required by the conditions of the race, and the over-weight shall exceed twenty pounds, it shall be announced from the stand before the heat; and the Judges shall have power, if in their belief such extra weight was imposed on the horse for an improper or fraudulent purpose, to substitute another rider or driver of suitable weight; and if they believe the horse has been prejudiced in the race by such overweight, he shall not be allowed to start again or continue in the race. [See also Rule 28, Sec. 5.]

SEC. 2. A horse prevented by this rule from continuing in the race shall not be distanced, but *ruled out*.

RULE 23.—LENGTH OF WHIPS.

SEC. 1. Riders and drivers will be allowed whips not to exceed the following lengths : For saddle horses, 2 ft. 10 in.; sulkies, 4 ft. 8 in.; wagons, 5 ft. 10 in.; double teams, 8 ft. 6 in.; tandem teams and four-in-hand, unlimited ; snappers, not longer than three inches. will be allowed in addition to the foregoing measurement.

RULE 24.—JUDGES' STAND.

SEC. 1. None but the Judges of the race in progress, and their assistants, shall be allowed in the Judges' stand during the pendency of a heat.

RULE 25.—SELECTION OF JUDGES.

SEC. 1. In every exhibition or race, over any course represented in the National Trotting Association, each course for itself, through the proprietor or association controlling the same, shall choose or authorize the selection of three (3) competent Judges, for the day or race, who shall understand the rules of the said National Association, and shall rigidly enforce the same ; and all their decisions shall be subject to and in conformity with said rules. [See also Art. 13 of By-Laws.]

SEC. 2. Any person who at the time is under penalty of suspension or expulsion, or who has any interest in, or any bet dependent upon the result of a race, or has any interest in either of the horses engaged therein, shall thereby be disqualified and restricted from acting as a Judge in that race. And if any person who is thus disqualified shall intentionally and deceptively violate this restriction, he shall, upon conviction thereof by the Board of Appeals, be adjudged guilty of a dishonorable act, for which he shall be expelled from every course represented in said National Association.

RULE 26.—AUTHORITY OF JUDGES.

[See also Rule 28.]

SEC. 1. The Judges of the day or race shall have authority, while presiding, to appoint Distance and Patrol Judges and Timers ; to inflict fines and penalties, as prescribed by these rules ; to determine all questions of fact relating to the race over which they preside ; to decide respecting any matters of difference between parties to the race, or any contingent matter

which shall arise, such as are not otherwise provided for in these rules ; and they may declare pools and bets "off" in case of fraud, *no appeal to be allowed from their decision in that respect*, but all their decisions shall be in strict conformity with the rules, or with the principles thereof. They shall have control over the horses about to start, and the riders or drivers and assistants of the horses, and, in the absence of other provision in these rules, they shall have authority to punish by a fine not exceeding \$100, or by suspension or expulsion, any such person who shall fail to obey their orders or the rules. [See Rule 28 ; and Rule 52, Sec. 1 and Sec. 2.]

RULE 27.—DISTANCE AND PATROL JUDGES.

SEC. 1. In all races of heats there shall be a Distance Judge appointed by the Judges of the race, or by those in authority, who shall remain in the distance-stand during the heats, and immediately after each heat shall repair to the Judges' stand and report to the Judges the horse or horses that are distanced, and all foul or improper conduct, if any has occurred under his observation.

SEC. 2. Patrol Judges may be similarly appointed, and it shall be their duty to repair in like manner to the Judges' stand, and report all foul or improper conduct, if any has occurred under their observation.

RULE 28.—POWERS AND DUTIES OF JUDGES.

[See also Rule 26.]

SEC. 1. The Judges shall be in the stand fifteen minutes before the time for starting the race ; they shall weigh the riders or drivers, and determine the positions of the horses, and inform each rider or driver of his place, before starting ; they may require the riders and drivers to be properly dressed ; they shall be prepared to take the time of each heat in the race, and they may appoint some suitable person or persons to assist them in that respect, and the time so taken shall be recorded and announced in conformity with these rules. [See also Rules 39 and 40, and Art. 13 of By-Laws.]

SEC. 2. The Judges shall ring the bell, or give other notice, ten minutes previous to the time announced for the race or heat to come off, which shall be notice to all parties to prepare for the race or heat at the appointed time, when all the horses must appear at the stand, ready for the race or heat, and any rider or

driver failing to obey this summons may be punished by a fine not exceeding \$100, or his horse may be ruled out by the Judges and considered drawn ; but in all stakes and matches a failure to appear promptly at the appointed time shall render the delinquent party liable to forfeit.

SEC. 3. The result of a heat shall not be announced until the Judges are satisfied as to the weights of the riders or drivers, and sufficient time has elapsed to receive the reports of the Distance and Patrol Judges.

SEC. 4. The Judges shall not notice or consider complaints of foul from any person or persons, except the Distance and Patrol Judges appointed by themselves or by those in authority, and from owners, riders, or drivers in the race. [See also Rule 48.]

SEC. 5. If the Judges believe that a horse is being or has been "pulled," or has been ridden or driven in other respects improperly, with a design to prevent his winning a heat which he was evidently able to win, and that such act was done on the part of the rider or driver for the purpose of throwing the race, or to perpetrate or aid a fraud, they shall have power to substitute a competent and reliable rider or driver for the remainder of the race, who shall be paid a reasonable compensation for his services, but not to exceed \$50, which shall be paid by the member, and the member may retain the amount paid from the purse, if any, which said substitute driver may win ; and any professional rider or driver who, without good and sufficient reason, refuses to be so substituted, may be fined, suspended, or expelled, by order of the Judges and upon approval of the Board of Appeals ; and the Judges may declare such heat void, if it be a deciding heat of the race ; and, if the result and circumstances of the race shall confirm their belief, the rider or driver so removed shall be expelled by the Judges. And if the owner or person or persons controlling the offending horse shall be a party or parties to such fraud, he or they, together with the horse, shall be punished by expulsion. [See also Rules 22 and 48.]

RULE 29.—STARTING AND KEEPING POSITIONS.

SEC. 1. No rider or driver shall cause unnecessary delay after the horses are called up, either by neglecting to prepare for the race in time, or by failing to come for the word, or otherwise ; and in scoring, if the word is not given, all the horses in the race shall immediately turn, at the tap of the bell or other signal given, and jog back for a fresh start. But there shall be

no recall after the starting word or signal has been given, and that the horses shall be deemed to have started in the race when the word "go" is given for the first heat; *provided, however,* that if the Judges shall through any error give signal of recall, *after having given the word*, DISTANCE shall be waived in that heat, except for foul riding or driving.

SEC. 2. The Judges shall, after the first scoring, choose one of the contending horses (the pole horse being selected, if deemed suitable), to score by. And no driver shall wilfully come up in advance of said horse, nor shall he wilfully hold back, under penalty of a fine, which shall be imposed and collected at once.

SEC. 3. No driver shall be allowed to sponge out his horse or horses oftener than once in five times scoring.

SEC. 4. If these requirements are not complied with on the part of any rider or driver, the Judges may not only start the race, or give the word without regard to the absence or position of the offending party or parties, but the offender may be punished by a fine not exceeding \$100, or by suspension not to exceed one year.

SEC. 5. In all cases, the starting word or signal shall be given from the Judges' stand, and in no instance shall a standing start be given.

SEC. 6. No warning shall be necessary on the part of the Judges before inflicting fines or penalties for a violation of any of the provisions of this rule.

SEC. 7. The horse winning a heat shall take the pole (or inside position) the succeeding heat, and all others shall take their positions in the order assigned them in judging the last heat. When two or more horses shall make a dead heat, the horses shall start for the succeeding heat in the same positions with reference to the pole that they occupied at the finish of the dead heat.

SEC. 8. In coming out on the homestretch the foremost horse or horses shall keep the positions first selected, or be liable to be distanced; and the hindmost horse or horses, when there is sufficient room to pass on the inside or anywhere on the homestretch, without interfering with others, shall be allowed to do so, and any party interfering to prevent him or them shall be distanced.

SEC. 9. If a horse, in attempting to pass another on the homestretch, should at any time cross or swerve, so as to impede the progress of a horse behind him, he shall not be entitled to win that heat.

SEC. 10. Although a leading horse is entitled to any part of the track, except after selecting his position on the homestretch, he shall not change from the right to the left, or from the inner to the outer side of the track, during any part of the race, when another horse is so near him that in altering his position he compels the horse behind him to shorten his stride, or causes the rider or driver of such other horse to pull him out of his stride; neither shall any horse, rider, or driver cross, jostle, or strike another horse, rider, or driver, nor swerve or do any other thing that impedes the progress of another horse; nor shall any horse, in passing a leading horse, take the track of the other horse so soon after getting the lead as to cause the horse passed to shorten his stride.

SEC. 11. In any heat wherein there shall be a violation of any of these restrictions, the offending horse shall not be entitled to win the heat, and he shall be placed behind all other horses in that heat. And if the impropriety was intentional on the part of the rider or driver, the offending horse may be distanced, and the rider or driver shall be suspended or expelled. [See Sections 8, 9 and 10; also Rule 48.]

RULE 30.—HORSE BREAKING.

SEC. 1. When any horse or horses break from their gait in trotting or pacing, their riders or drivers shall at once pull them to the gait in which they were to go the race, and any party failing to comply with this requirement, if he come out ahead, shall loose the heat, and the next best horse shall win the heat; and whether such breaking horse come out ahead or not, all other horses shall be placed ahead of him in that heat, and the Judges shall have discretionary power to distance the offending horse or horses, and the rider or driver may be punished by a fine not to exceed \$100, or by suspension not exceeding one year.

SEC. 2. Should the rider or driver comply with this requirement, and the horse should gain by a break, twice the distance so gained shall be taken from him at the coming out; but this provision must not be so construed as to shield any trotting or pacing horse from punishment for running.

SEC. 3. In case of any horse (in a trotting race) repeatedly breaking, or running, or pacing, while another horse is trotting, the Judges shall punish the horse so breaking, running, or pacing, by placing him last in the heat.

SEC. 4. To assist in determining the matters contained in

Sections 1, 2 and 3, it shall be the duty of one of the Judges to call out during the progress of the race every break made, designating by colors or name the horse making it and the character of the break, and a Judge or assistant shall at once note the fact in writing.

SEC. 5. A horse breaking at or near the score shall be subject to the same penalty as if he broke on any other part of the track.

RULE 31.—RELATIVE TO HEATS AND HORSES ELIGIBLE TO START.

SEC. 1. In heats one, two, three, or four miles, a horse not winning one heat in three shall not start for a fourth, unless such horse shall have made a dead heat. In heats best three in five, a horse not winning a heat in the first five shall not start for a sixth, unless said horse shall have made a dead heat, but horses so ruled out shall have a right to a share of the purse or premium, according to their rank at the close of their last heat. And where ten or more horses start in a race, every horse not distanced shall have the right to compete until the race is completed—subject, however, to all other penalties in these rules.

RULE 32.—DEAD HEATS.

SEC. 1. A dead heat shall be counted in the race, and shall be considered a heat which is undecided only as between the horses making it, and it shall be considered a heat that is lost by all the other horses contending therein; and the time made in a dead heat shall constitute a record or bar for each horse making such dead heat. [See also Rule 40, Sec. 2.]

SEC. 2. Whenever each of the horses making a dead heat would have been entitled to terminate the race had he won said dead heat, they only shall start again.

SEC. 3. A horse prevented from starting by this rule shall not be distanced, but ruled out, and shall be entitled to a share of the purse or premium according to his rank at the close of his last heat.

RULE 33.—TIME BETWEEN HEATS.

SEC. 1. The time between heats shall be twenty minutes for mile heats; and for mile heats best three in five, twenty-five minutes; and for two-mile heats, thirty minutes; and for three-

mile heats, thirty-five minutes ; and should there be a race of four-mile heats, the time shall be forty minutes.

SEC. 2. Not more than two races shall be "sandwiched" in the performance on one day, but when one race of the two has been finished, another may be called on. And when races are "sandwiched," the first race started shall be trotted out on time as far as practicable.

SEC. 3. After the first heat the horses shall be called five minutes prior to the time of starting.

RULE 34.—TIME ALLOWED IN CASE OF ACCIDENTS.

SEC. 1. In case of accidents, ten minutes shall be allowed ; but the Judges may allow more time when deemed necessary and proper.

RULE 35.—COLLISION AND BREAK-DOWN.

SEC. 1. In case of collision and break-down, the party causing the same, whether wilfully or otherwise, may be distanced ; and if the Judges find the collision was intentional or to aid fraud, the driver in fault shall be forthwith suspended or expelled, and his horse may be distanced ; but if necessary to defeat fraud, the Judges shall direct the offending horse to start again.

SEC. 2. No horse but the offending one shall be distanced in such a heat, except for foul driving.

SEC. 3. The Judges in a concluding heat, finding that a collision involved a fraudulent object, may declare that heat void. [See also Rule 48.]

RULE 36.—PLACING HORSES.

SEC. 1. A horse must win a majority of the heats which are required by the conditions of the race to be entitled to the purse or stake ; but if a horse shall have distanced all competitors in one heat, the race will then be concluded, and such horse shall receive the entire purse and stakes contended for. [See Rule 37, Sec. 3.]

SEC. 2. When more than one horse remains in the race entitled to be placed at the finish of the last heat, the second best horse shall receive the second premium, if there be any ; and if there be any third or fourth premium, etc., for which no horse has won and maintained a specific place, the same shall go to the winner ; *provided*, that the number of premiums awarded shall not exceed the number of horses which started in the race.

SEC. 3. The foregoing provisions shall always apply, in such cases, unless otherwise stated in the published conditions of the race.

SEC. 4. In deciding the rank of horses other than the winner, as to second, third and fourth places, etc., to be assigned among such as remain in the race entitled to be placed at the conclusion of the last heat thereof, the several positions which have been assigned to each horse so contending shall be considered as to every heat in the race—that is, horses having won two heats, better than those winning one ; a horse that has won a heat, better than a horse only making a dead heat ; a horse winning one or two heats and making a dead heat, better than one winning an equal number of heats but not making a dead heat ; a horse winning a heat or making a dead heat and not distanced in the race, better than a horse that has not won a heat or made a dead heat ; a horse that has been placed "second" one heat, better than a horse that has been placed "third" any number of heats.

SEC. 5. When two or more horses appear equal in rank in the summary of the race, they shall share equally in the award of premiums won by them.

SEC. 6. In case these provisions shall not give a specific decision as to second and third money, etc., the Judges of the race are to make the awards according to their best judgment, but in conformity with the principles of this rule.

RULE 37.—DISTANCES.

SEC. 1. In races of mile heats, 80 yards shall be a distance. In races of two-mile heats, 150 yards shall be a distance. In races of three-mile heats, 220 yards shall be a distance. In races of mile heats, best three in five, 100 yards shall be a distance. In heats of not over one mile, wherein eight or more horses contend, the distance shall be increased one half ; but in any heat wherein the number of starters shall be reduced to less than eight, the ordinary distance shall be restored.

SEC. 2. All horses whose heads have not reached the distance-stand as soon as the leading horse arrives at the winning-post shall be declared distanced, except in cases otherwise provided for, or the punishment of the leading horse by setting him back for running, when it shall be left to the discretion of the Judges. [See Rule 16, Sec. 4 ; Rule 29, Sec. 1 ; Rule 35, Sec. 2 ; and Rule 40, Sec. 2.]

SEC. 3. A distanced horse is out of the race, and if in any heat

one horse shall distance all competitors, the race will then be completed, and the winner shall be entitled to the entire purse and stakes contended for, unless otherwise stipulated in the published conditions of the race. [See Rule 36, Sec. 1.]

RULE 38.—RANK BETWEEN DISTANCED HORSES.

SEC. 1. Horses distanced in the first heat of a race shall be equal, but horses that are distanced in any subsequent heat shall rank as to each other in the order of the positions to which they were entitled at the start of the heat in which they were distanced.

RULE 39.—TIME AND ITS RECORD.

SEC. 1. In every public race the time of each heat shall be accurately taken and placed in the record, and upon the decision of each heat the time thereof shall be publicly announced by the Judges, except as provided in these rules concerning those heats which are not awarded to either of the leading horses.

SEC. 2. It shall be the duty of the Judges of the race to take the time as aforesaid, or to appoint some suitable person or persons to assist them in that respect, and no *unofficial* timing shall be announced or admitted to the record. [See Art. 20 of By-Laws ; See also Rules 40, 41 and 43.]

RULE 40.—TWO LEADING HORSES TO BE SEPARATELY TIMED.

SEC. 1. The two leading horses shall be separately timed, and if the heat is awarded to either, his time only shall be announced and be a record or bar as the case may be ; and if the winning horse shall afterwards be ruled out of the race for fraud or ineligibility, he shall retain the record or bar acquired by the time so announced. [See also Rules 39, 41, and 43.]

SEC. 2. In case of a dead heat, the time shall constitute a record or bar for the horses making the dead heat ; and if for any other cause the heat is not awarded to either of the leading horses, it shall be awarded to the next best horse, and no time shall be given out by the Judges or recorded against either horse ; and the Judges may waive the application of the rule in regard to distance in that heat, except for foul riding or driving.

RULE 41.—SUPPRESSION OF TIME.

SEC. 1. In any public race, if there shall be an intentional suppression or misrepresentation in either the record or the

announcement of the time of any heat in the race, procured through any connivance, or collusive arrangement, or understanding between the proprietor or Judges or Timers and the owner of the winning horse or his driver or other authorized agent, it shall be deemed fraudulent. And any horse winning a heat or making a dead heat wherein there was such a fraudulent suppression of time, together with the parties implicated in the fraud, shall by operation of the rules be henceforth expelled. [See Rules 39, 40, 43 and 44.]

RULE 42.—A PUBLIC RACE.

SEC. 1. Any contest for purse, premium, stake or wager, on any course, and in the presence of a Judge or Judges, shall constitute a public race.

RULE 43.—TIME RECORDS, AND BAR RECORDS.

[When Time Becomes a Record or Bar.]

SEC. 1. A *record* can hereafter be made only over a track of a member of The National Trotting Association, in a public race, the horse to trot or pace a full mile according to rule ; and the time must be taken by at least two timers selected for the purpose, and the record of their names as well as the time must be kept.

SEC. 2. Time otherwise taken or at fairs and on any track, whether short or not, shall be known as a *bar*, and shall constitute a bar the same as if regularly made over a track that was full measurement, but shall not be known as a "record" or be evidence in favor of the horse as to the time made by him. [This rule was adopted in February, 1880. For remarks thereon, see *Preface* to this edition.]

RULE 44.—WHEN TIME SHALL NOT BE A BAR.

SEC. 1. Time made under the saddle, as well as time made when two or more horses are harnessed together, shall constitute a bar for races of the same character, but shall not be a bar for races of a different character.

RULE 45.—COMPLAINTS BY RIDERS OR DRIVERS.

SEC. 1. All complaints by riders or drivers, of any foul riding or driving, or other misconduct, must be made at the termination of the heat, and before the rider or driver dismounts or leaves his vehicle.

RULE 46.—DECORUM.

SEC. 1. If any owner, trainer, rider, driver, or attendant of a horse, or any other person, use improper language to the officers of the course or the Judges in a race, or be guilty of any improper conduct, the person or persons so offending shall be punished by a fine not exceeding \$100, or by suspension or expulsion. [See also Rule 48.]

RULE 47.—LOUD SHOUTING.

SEC. 1. Any rider or driver guilty of loud shouting, or making other improper noise, or of making improper use of the whip during the pendency of a heat, shall be punished by a fine not to exceed \$25, or by suspension during the meeting. [See also Rule 48.]

RULE 48.—“FOULS.”

SEC. 1. If any act or thing shall be done by any owner, rider, driver, or their horse or horses, during any race or in connection therewith, which these rules define or warrant the Judges in deciding to be fraudulent or foul, and if no special provision is made in these rules to meet the case, the Judges shall have power to punish the offender by fine not to exceed \$100, or by suspension or expulsion. And in any case of foul riding or driving they shall distance the offending horse, unless they believe such a decision will favor a fraud.

SEC. 2. The penalty imposed herein for “Fouls” shall apply to any act of a fraudulent nature, and to any unprincipled conduct such as tends to debase the character of the trotting turf in the estimation of the public. [See Rule 28, Sections 4 and 5; Rule 29, Sec. 11; See also Rules 35, 46, and 47.]

RULE 49.—FINES.

SEC. 1. All persons who shall have been fined under these rules, unless they pay the fines imposed in full on the day of assessment, shall be suspended until they are so paid or deposited with the Treasurer of The National Trotting Association. [See By-laws, Article 17; See also Rule 52, Sec. 1.]

SEC. 2. All fines which shall be paid to the association or proprietor on whose grounds they were imposed, shall by them be reported and paid to the Treasurer of said National Association. [See By-laws, Art. 12, Sec. 4.]

RULE 50.—NO COMPROMISE OF PENALTIES BY JUDGES OR MEMBERS.

SEC. 1. In no case shall there be any compromise or change on the part of the Judges, or member, in the manner of punishment prescribed in the rules, but the same shall be strictly enforced; but members may accept compromise settlements of suspended dues, and the penalties in such cases shall be reduced in proportion. [See Rule 52.]

RULE 51.—SUSPENSIONS AND EXPULSIONS.

SEC. 1. Whenever the penalty of suspension is prescribed in these rules, if applied to a horse, it shall be construed to mean a disqualification, during the time of suspension, to enter or compete in any race to be performed on the course of the association or proprietor; and if applied to a person, it shall be construed to mean a conditional withholding of all right or privilege to make an entry, or to ride, drive, train, or assist on the course and grounds of the association or proprietor; *provided*, that any entry made by any person or of any horse so disqualified shall be held liable for the entrance fee thus contracted, without any right to compete during suspension.

SEC. 2. If no limit is fixed in an order of suspension and none is defined in the rule applicable to the case, the punishment shall be considered as limited to the season in which the order was issued. [See Section 7.]

SEC. 3. Whenever the penalty of expulsion is prescribed in these rules, it shall be construed to mean unconditional exclusion and disqualification from any participation in the privileges and uses of the course and grounds of the association or proprietor.

SEC. 4. No penalty of expulsion for fraud shall be removed or modified after confirmation by the Board of Review, and on an appeal to the Board of Review the burden of proof shall be on the applicant, but expulsion for offenses not fraudulent may be so modified or removed.

SEC. 5. Any associate member allowing the use of their track by an expelled man or horse, after notice from the Secretary of National Trotting Association, shall be subject to a fine of \$100.

SEC. 6. Whenever either of these penalties has been imposed on any horse or person, on the grounds of any association or proprietor holding membership in said National Association, written or printed notice thereof shall immediately be forwarded

to the Secretary of said National Association, giving the name and residence of the person, and the color, sex and name of the horse, and stating the offense and the character of punishment, who shall at once transmit the information to each associated course or member; and thereupon the offender thus punished shall suffer the same penalty and disqualification with each and every association and proprietor holding membership in said National Association.

SEC. 7. All suspensions imposed on horses for non-payment of entrance dues, shall cease and become void by limitation, at the expiration of six years from the date of their imposition, as per the records of this Association. [The limitation herein does not apply to men.]

RULE 52.—RIGHT OF APPEAL.

SEC. 1. Appeals may be taken to the associate member in cases of suspension imposed by order of the Judges of a race or of an officer acting for the member, but members shall not remove or modify any fine imposed by the Judges of a race, nor review any order of expulsion. [See Section 3 as to Appeals, and rule 49 as to fines.]

SEC. 2. All decisions and rulings of the Judges of any race, and of the several associations and proprietors belonging to the National Trotting Association, may be appealed to the Board of Review or to a District Board in the proper district, and shall be subject to review by such Board, upon facts and questions involving the proper interpretation and application of these rules; *provided*, that parties to be affected thereby, shall be notified as the Board shall direct, of a time and place when such appeal will be acted on; and *provided further*, if the appeal relate to the decision of a race, immediate notice shall have been given to the Judges of the race, of the intention so to appeal. Notices of all other appeals must be given within one week from the announcement of the decisions appealed. [See By-Laws, Art. 7, Sec. 8, and Sec. 9; See also Rule 26, Sec. 1, and Rule 51, Sec. 4.]

SEC. 3. Any person who shall appeal from any order suspending him or his horse for non-payment of entrance money or a fine, may deposit the amount claimed with the Treasurer of said National Association, who may thereupon issue a certificate or notice temporarily reinstating or relieving the party and his horse from such penalty, subject to the final action of the Board of Appeals,

RULE 53.—AGE OF A HORSE—HOW RECKONED.

SEC. 1. The age of a horse shall be reckoned from the first day of January of the year of foaling.

RULE 54.—COLTS AND FILLIES EQUALLY ELIGIBLE TO ENTER.

SEC. 1. All colts and fillies shall be eligible alike to all premiums and stakes for animals of their age, unless specially excluded by the conditions imposed.

RULE 55.—A GREEN HORSE.

SEC. 1. A green horse is one that has never trotted or paced for premiums or money, either double or single.

RULE 56.—RACES MADE AND “NO HOUR NAMED.”

SEC. 1. All races shall be started at 2 o'clock P. M., from the 1st day of April to the 15th day of September, and after that date at 1 o'clock P. M., until the season closes, unless otherwise provided.

RULE 57.—RACE MADE AND NO DISTANCE SPECIFIED.

SEC. 1. When a race is made and no distance specified, it shall be restricted to the following distances, viz.: One mile and repeat; mile heats, best 3 in 5; two miles and repeat, or three miles and repeat, and may be performed in harness, to wagon, or under the saddle, the distance and mode of going to be named by the party accepting the race.

RULE 58.—RACE MADE TO “GO AS THEY PLEASE.”

SEC. 1. When a race is made “to go as they please,” it shall be construed that the performance shall be in harness, to wagon, or under the saddle; but after the race is commenced no change shall be made in the mode of going, and the race shall be deemed to have commenced when the horses appear on the track.

RULE 59.—RACE MADE TO GO “IN HARNESS.”

SEC. 1. When a race is made to go “in harness,” it shall be construed to mean that the performance shall be to a sulky.

RULE 60.—MATCHES MADE AGAINST TIME.

SEC. 1. When a horse is matched against time, it shall be proper to allow any other horse to accompany him in the per-

formance, but not to be harnessed with, or in any way attached to him.

SEC. 2. In matches made against time, the parties making the match shall be entitled to three trials, unless expressly stipulated to the contrary, which trials shall be had on the same day—the time between trials to be the same as the time between heats in similar distances.

RULE 61.—HORSES SOLD WITH ENGAGEMENTS.

SEC. 1. The seller of a horse sold with his engagements has not the power of striking him out.

SEC. 2. In case of private sale, the written acknowledgment of the parties that the horse was sold with engagements, is necessary to entitle the buyer to the benefit of this rule.

A true copy from record, February 12th, 1880.

Attest—

JNO. J. VAIL, *Secretary.*

BETTING RULES.

IN FORCE FROM AND AFTER FEBRUARY 1, 1881.

No. 1. All pools and bets must follow the main stakes, purse, or other prize, as awarded by the decision of the judges, except in cases where the horse that comes in first is found to be disqualified, or the bets are declared off for fraud or collusion.

No. 2. If a race is postponed, it shall not affect the pools or bets that may have been made on it. They shall stand until the race comes off, unless the contrary shall be agreed on between the parties betting; provided the race takes place within five days of the time first named; after which time all bets and pools are drawn, unless made play or pay.

No. 3. When any change is made in the conditions of a race, all pools and bets, made previous to the announcement of the change shall be null and void.

No. 4. When a bet is made on one horse against the field, he must start or the bet is off, and the field is what starts against him ; but there is no field unless one start against him.

No. 5. In pools and betting, the pool stands good for all the horses that start in the race ; but for those horses that do not start, the money must be returned to the purchaser.

No. 6. In races made play or pay, outside bets are not play or pay unless so made by the parties.

No. 7. All bets are void on the decease of either party, but in case a horse should die, play or pay bets made on him stand.

No. 8. If a bet is made on any number of straight heats, and there is a dead heat made, the heats are not straight, and the party betting on straight heats loses.

No. 9. If in any case the Judges declare a heat null and void, it does not affect the bets as in case of a dead heat as to winning in straight heats.

No. 10. When a race is coming off, and a party bets that a

heat will be made in two minutes and thirty seconds (2.30), and they make two thirty (2.30) or less, he would win. If he bets they will beat two minutes and thirty seconds (2.30), and they make exactly two thirty (2.30), he loses; but if he takes two minutes and thirty seconds (2.30) against the field, and they make exactly two thirty (2.30), it is a tie, or draw bet. All time bets to be decided accordingly.

No. 11. In a double event—where there is no action on the first race in order, in consequence of forfeit or other cause, the bet is off; but where there is an action on the bet, and the party betting on the double event shall have won the first, the bet shall then stand as a play or pay bet for the second event,

No. 12. If a bet should be made during the contest of a heat that a named horse will win that heat, and he makes a dead heat, the bet is drawn; but if after the horses have passed the score, a party bets that a certain named horse has won the heat, and the Judges declare it a dead heat, the backer of the named horse loses.

No. 13. In races between two or more horses, of a single dash at any distance, which result in a dead heat, it is a draw between the horses making the dead heat, and bets between them are off; and if it is sweepstakes, the money of the beaten horses is to be divided between the horses making the dead heat.

No. 14. When a better undertakes to place the horses in a race, he must give a specified place, as first, second, third, and so on. The word "last" shall not be construed to mean "fourth and distanced," if four start, but "fourth" only, and so on. A distanced horse must be placed "distanced."

No. 15. Horses shall be placed in a race and bets decided as they are placed in the official record of the day; provided, that where a horse comes in first and it is afterward found that he was disqualified for fraud, the bets on him shall be null and void, but pool-sellers and stakeholders shall not be held responsible for moneys paid by them under the decision of the Judges of the race. [See article 13 of By-laws.]

No. 16. Bets made during a heat are not determined until the conclusion of the race, if the heat is not mentioned at the time.

No. 17. Either of the betters may demand stakes to be made, and, on refusal, declare the bet to be void.

No. 18. Outside bets cannot be declared off on the course unless that place was named for staking the money, and then it must be done by filing such declaration in writing with the

Judges, who shall read it from the stand before the race commences.

No. 19. Bets agreed to be paid or received, or bets agreed to be made or put up elsewhere than at the place of the race, or any other specified place, cannot be declared off on the course.

No. 20. Bets on horses disqualified and not allowed to start are void, unless the bets are play or pay.

No. 21. A bet cannot be transferred without the consent of parties to it, except in pools.

No. 22. When a bet is made on a horse's time, it shall be decided by the time made in a public race, he going single and carrying his proper weight.

No. 23. When a horse makes time on a short track it shall not constitute a record for the decision of bets.

No. 24. Horses that are distanced or drawn at the conclusion of a heat, are beaten in the race by those that start afterward. A horse that is distanced in a heat is beaten by one drawn at the termination of the same heat.

No. 25. When a man lays odds and intends to take the field against a single horse, he must say so, and the other party will choose his horse. When a man undertakes to name the winner, whether he bets odds or takes odds, he must name some one horse.*

No. 26. All bets relate to the purse, stake, or match, if nothing to the contrary is specified at the time of making the bet.

No. 27. Parties wishing all the horses to start for a bet, must so name it at the time the bet is made.

No. 28. When the Judges declare a heat null and void, all bets on that heat shall stand for decision on the next heat.

No. 29. All pools and bets shall be governed and decided by these rules, unless a stipulation to the contrary shall be agreed upon by the parties betting.

No. 30. Should any contingencies occur not provided for by these rules, the Judges of the day shall decide them.

No. 31. When a horse which has not been sold in the pools wins the race, the best horse sold in the pools wins the money.

A true copy from record.

Attest—

JNO. J. VAIL, *Secretary.*

TESTIMONIALS.

FIRE DEPARTMENT OF THE CITY OF CHICAGO,
OFFICE OF THE FIRE MARSHAL, No. 2 QUINCY STREET,
CHICAGO, ILL., Sept. 10, 1877.

To whom it may concern:

This is to certify that Mr. B. Pitcher, the author of this book, came to us a stranger, and explained his theory and practice in shoeing of horses and restoring bad feet and shoulders, and taking proper care of the same. Having a number of horses in this department that were lame in the feet and shoulders, we gave him an opportunity to practically test his theory on the same while he was having his book published. We will say that he has accomplished more than we expected during the time the horses have been under his treatment, and that we have become satisfied that the method adopted by some in cutting out the frog, braces and sole, and putting on a shoe hot enough to burn the foot, is entirely wrong and hurtful.

We do most cheerfully recommend his book, theory and practice to all owners of horses and shoeing smiths.

M. BENNER, Fire Marshal.

J. P. BARRETT, Supt. Fire Alarm Tel.

OFFICE OF THE McCORMICK'S REAPER WORKS,
CHICAGO, ILL., Sept. 1, 1877.

This is to certify that in the month of July last I formed the acquaintance of Mr. B. Pitcher, the author of this book, at which time my horse was very lame—he had on bar shoes. Mr. Pitcher advised me to have them removed and substitute his method of shoeing, which I did, according to his directions, and the result is, that he has recovered from his lameness and his feet are sound and good to-day. Under these considerations I do cheerfully recommend his book and system of shoeing to all, both for well or crippled horses.

W. R. SELLECK.

OFFICE OF THE CHICAGO CITY R. R. CO.,

To whom it may concern: CHICAGO, ILL., Sept. 7, 1877.

Sometime in July, 1877, my horse became quite lame. Mr. B. Pitcher, the author of this book, shod him with the Perkins shoe, fitted according to his system of shoeing, and he soon became better. I can readily recommend his book, theory and practice, to all owners of horses and horse shoers.

C. W. HAMMOND, Foreman 21st st. R. R. barn.

I do cheerfully indorse the above.

W.M. BURT, Veterinary Surgeon.

OFFICE OF LEROY PAYNE,

LIVERY, BOARDING AND SALE STABLES, 144 AND 145 MICHIGAN AVE.,
CHICAGO, ILL., Sept. 7, 1877.

This is to certify that Mr. B. Pitcher has had two of my horses shod according to his system of shoeing, and it is gratifying for me to say that, by so doing, a great change for the better has been the result. Previous to his method being tested they traveled quite lame, but at the present they are all right.

I can cheerfully recommend his book and his system of shoeing to all horse owners and shoeing smiths. LEROY PAYNE.

To whom it may concern: CHICAGO, ILL., Sept. 7, 1877.

This is to certify that I have shod several horses under the direction of Mr. B. Pitcher, the author of this book, and I think his system of shoeing bad feet, and his method of taking care of horses' feet, is good, and I can cheerfully recommend his book to all owners of horses and to all shoeing smiths.

ABRAHAM S. BEAMISH, Practical Horse shoer,
54 Pacific avenue, first shop south of Field, Leiter & Co's stables.

To whom it may concern: CHICAGO, ILL., Sept. 7, 1877.

We, the undersigned, have shod several horses under the direction of Mr. B. Pitcher, the author of this book, and have found his system to be very good, and do cheerfully recommend his book and method to all owners of horses and to all horse shoers.

McGUIRE BROS.,
Practical Horse shoers, 287 E. Kinzie st.

NEWARK CITY INSURANCE COMPANY.

INSURANCE BUILDING, 174 LA SALLE ST., CHICAGO, Jan. 22, 1879.

I wish to add my testimony in favor of Mr. B. Pitcher's successful method of treating horses. My mare, "Nellie," became lame in the shoulder. After employing the best veterinary skill in Chicago, all to no avail, I was recommended to Mr. Pitcher. In less than three weeks she was taken from his hands as sound as a "bell," with no return, which is nearly a year since the lameness.

THOMAS HANCOCK.

CHICAGO, January 16, 1879.

As far as I am capable of judging, Mr. Pitcher is an experienced, practical farrier, as well as a successful horse doctor. I had a horse which became lame in its fore-legs. Mr. P. assured me that he could cure the lameness. I therefore let him try. Within four weeks he pronounced the animal well, and, although the horse has been driven quite constantly, he shows no signs of his former lameness.

JAS. K. BURTIS.

OFFICE OF C. H. SLACK'S WHOLESALE AND RETAIL GROCERY HOUSE,
109 MADISON ST., CHICAGO, Jan. 14, 1879

Last winter I saw B. Pitchard selling his books on the horse. He was saying what he could do in curing cripples, such as stiff shoulders, corns, contracted feet, etc. I told him I had a fine horse that was lame, and if he would tell where he was lame and cure him, I would give him ten dollars. He took the job—*no cure no pay*. He had him under his treatment three weeks; then I put him to work, and he has done his work every day since, and is sound, and one of the best horses I have. When Pitcher took him he had on bar shoes. His heels, braces and frog had been cut away, and the foot burnt. Pitcher took off the bar shoes and put on his open offset shoe. He told me when the horse got a sound foot he would be a horse again, which he has. I consider his system of great value to owners of horses, and wo' ' cheerfully recommend it and his book.

A. S. SAVAGE,
Foreman at Slack's Barn.

OFFICE OF A. M. FORBES' TRUCK STABLES,
24 AND 26 ADAMS ST., CHICAGO, Jan. 14, 1879.

To whom it may Concern:

Last March B. Pitcher commenced shoeing my horses. Then their feet were in bad order, they having been burnt, the frogs and braces cut away, the hoofs dry and feverish, and they were lame. He has shod them since, and now they are all in good order, with large, strong walls, frogs and braces. You would think they had just come in from the country. I think his system is the best I have found. I would most cheerfully recommend his book and system to all owners of horses.

A. M. FORBES.

RACINE, WIS., January 20, 1880.

To whom it may concern.

This is to certify that B. Pitcher, came to me a stranger, on the 27th day of December, 1879, and explained his theory and practice of restoring horses feet that are sore from contraction and corns, resulting often from bad shoeing. I gave him my family horse to work on, which had been lame a long time, his feet were contracted. The best shoeing I could get has not cured him. Mr. Pitcher took the horse and kept him (11) eleven days, when he returned him to me in a very much improved condition, he having spread his feet $1\frac{3}{8}$ inches during the time. I have driven the horse nearly every day since, and find his lameness gone, and his driving is very much better, and improving daily, and I can cheerfully recommend his theory and practice to all owners of horses thus afflicted.

W. T. BULL.

RACINE, WIS., Jan. 29th, 1880.

This is to certify that we employed Mr. B. Pitcher to treat one of our horses, which had contracted feet. He began treatment January 6th. We notice a great improvement and are confident that Mr. Pitcher can do what he claims for a horse's foot, and recommend him to all owners of horses in need of such services.

THE BLAKE-BEEBE CO.

RACINE, WIS., February 3d, 1880.

This is to certify that two weeks ago my carriage team was lame in their front feet, from contraction and corns. Mr. B. Pitcher, a horse-shoer and author of a book entitled, "The Horse," came to me a stranger and explained his mode and practice of restoring horses' feet in like condition and offered to take the horses and restore them—no cure, no pay. After examining his specimens, I became satisfied he understood his business, and I gave him my horses to work on. I saw what he done and I must say it was new to me. I am satisfied his system is a good one, my horses are much improved and travel better than they have for a long time. I would most cheerfully recommend him to all having horses thus afflicted.

M. B. ERSKINE.

KENOSHA, WIS., March 23, 1880.

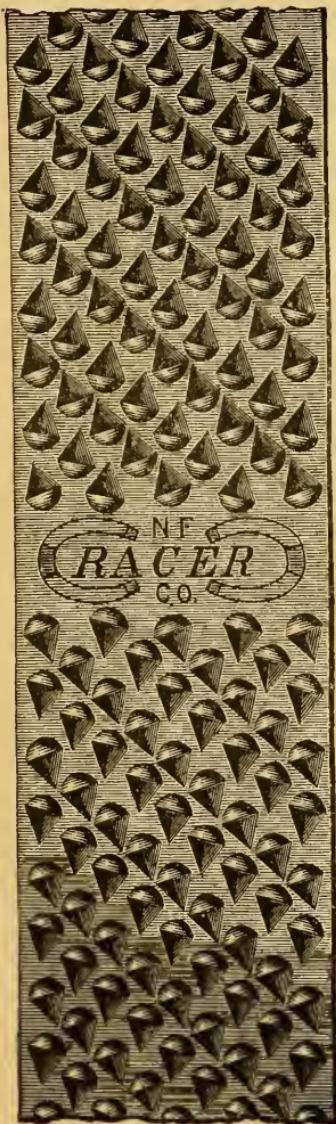
To whom it may concern.

We, the undersigned, have had lame and crippled horses, from corns, contraction and sore shoulders. We employed Mr. B. Pitcher to treat them, and he has succeeded beyond our expectations. We cheerfully recommend him to all owners of horses thus afflicted.

EDWARD BAIN.	E. G. TIMME, County Clerk.
K. S. PORVEY, City Hotel.	MET MILLER, Watchmaker.
MR. R. O. GOTTFREHM.	M. J. LEWIS.
GEORGE YULE.	LEVI GRANT.
DR. H. JUNGE.	GEO. S. BALDWIN.
O. M. PETTIT.	

“RACER” HORSE RASPS.

PATENTED.



We present herewith an illustration of an ingenious arrangement of the teeth of **Horse Rasps**, from which it will be seen that the faces of each alternate row of teeth are presented to the work at reversed angles, producing an obliquity of the cutting edges, which gives a shearing or drawing cut. Thus, the substance is cut away, instead of being torn, and a much larger quantity of material is removed with the same power, than if the faces of the teeth were arranged at right angles to the edges of the rasp, as is the usual custom. By this arrangement, the teeth are much more durable, their points being less liable to crumble in use; and, as will be seen from their principle of construction, they are less liable to become clogged; the refuse, instead of being forced into the space in front of the tooth, as in the old style, is, to some degree, by the very action of the operator, pressed outward, and thus made to clear itself. For Horse Rasps of this brand, both *tanged* and *plain*, we have adopted the name of “**RACER**.” They are made of the usual sizes, from an *extra* quality of “mild” steel, each tooth having a double blow, and are tempered by a process which gives them extreme toughness. The verdict of those who have used this rasp, demonstrates that it is unequaled by any rasp known.

MANUFACTURED ONLY BY THE

NICHOLSON FILE CO.

PROVIDENCE, R. I.

Ask for the “**RACER**” RASP. Every Jobber has, or will get them for you.

With the GLOBE NAIL a shoer can drive on a set of Shoes and be earning money, while another is spending the time in hammering and pointing a set of other nails. In most cases where nails are driven, the shell of the hoof is not thicker than the head of the nails used, and as the GLOBE NAILS are made thin, smooth and even, they are considered the *safest, best, most economical, and merciful* to the animal, of any nail in use.

No. 7.



No. 8.



No. 9.



No. 10.



The GLOBE NAILS are made from best Norway and Swedish iron, finished and pointed, ready for driving.

The peculiar process by which these nails are made ensures a greater uniformity in stiffness, thickness, *lengths, widths and points*, than is the case with any other nail, and they will drive *truer, clinch better, and last longer*.

FOR SALE BY HARDWARE AND IRON DEALERS GENERALLY.

If the Globe Nails are not to be found in your town, send your order to us, and we will see that it is filled.

GLOBE NAIL COMPANY,

THOS. C. CLARKE, Agent,

159 & 161 Lake Street, Chicago.

GLOBE NAIL CO.

MANUFACTURERS OF THE

GLOBE HORSE SHOE NAIL.

JOHN GARDNER, *President.*

T. H. FULLER, *Treasurer.*

BOSTON, MASS.

Chicago Office, 159 & 161 Lake Street.

THOS. C. CLARKE,

EXCLUSIVE AGENT FOR WESTERN STATES AND TERRITORIES.

No. 3.



No. 4.



No. 5.



No. 6.



TWO GOLD MEDALS AWARDED

By the Paris Exposition, being the ONLY GOLD MEDALS EVER GIVEN FOR HORSE NAILS SINCE THE CREATION OF THE GLOBE ITSELF. No other exhibitor at Paris, of any line of goods, has received TWO Gold Medals.

Ask for GLOBE NAILS and take no other.

C. F. DEWICK & CO.

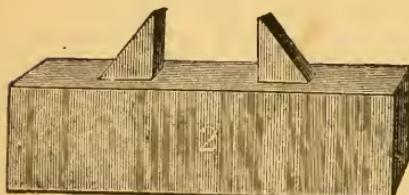
MANUFACTURERS OF

PATENT TOE CALKS,

360 DORCHESTER AVE.

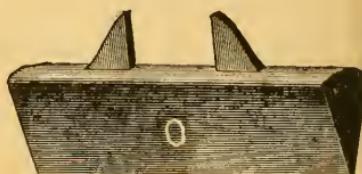
SOUTH BOSTON, MASS.

BLUNT



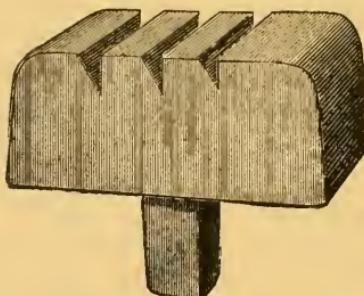
Nos. 1, 2, 3, 4, 5

SHARP



Nos. 0, 1, 2, 3, 4

Put up in Boxes containing 25 pounds.



DIE FOR WELDING SHARP CALKS.

In addition to our well known one-pronged Toe-calk, we are now prepared to offer two-pronged calks of the above pattern.

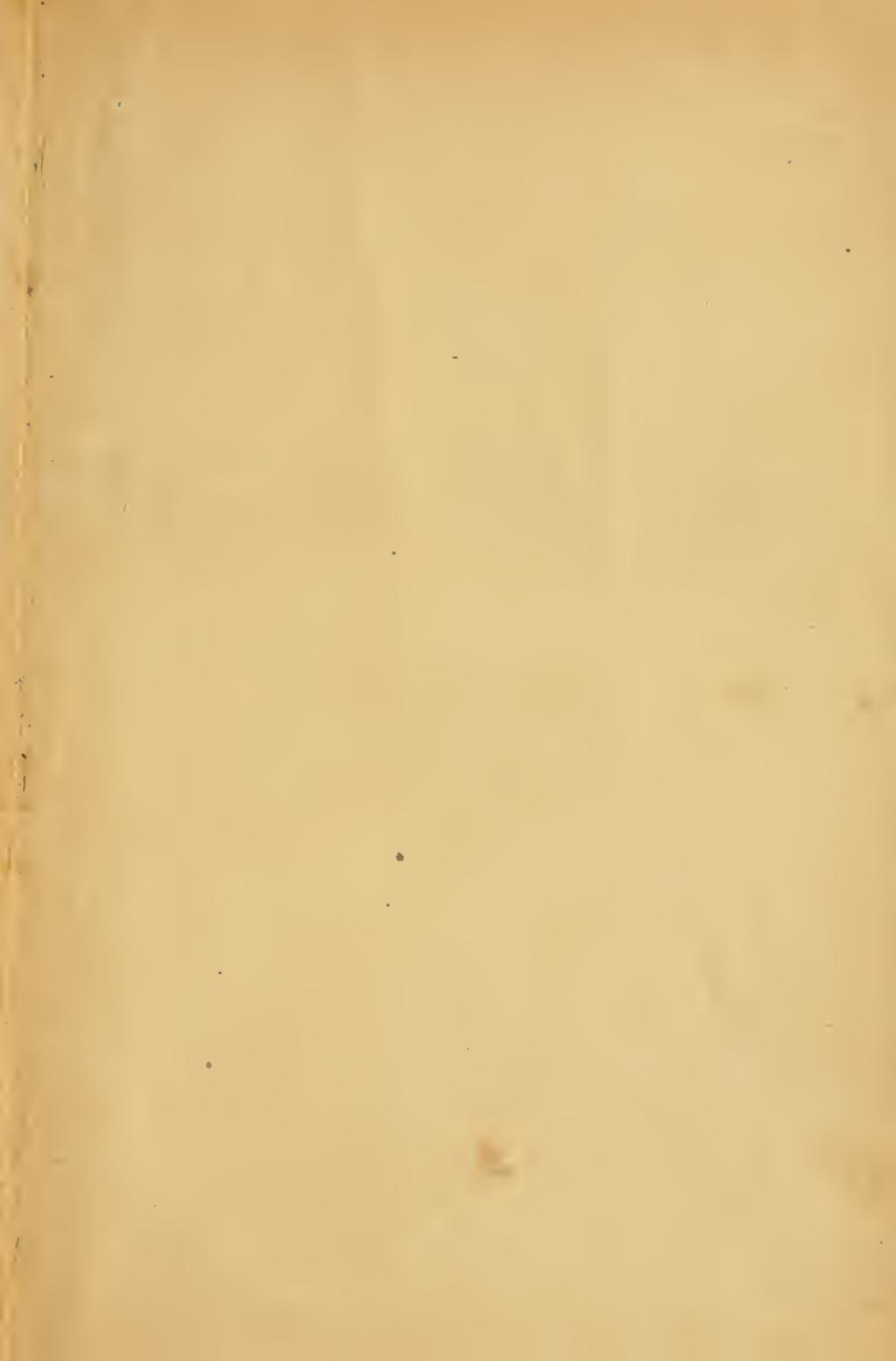
These calks are peculiarly adapted for use with machine-made shoes, as the position of the spurs keeps them clear of the crease, and does away with all danger of bursting the edge of the shoe.

They are made from carefully selected brands of Steel; will weld readily with sand, and harden well.

This Swedge or Die will be found a great assistance in welding sharp calks. One or two blows on the sharp edge of the calk will suffice to drive the spurs well into the hot iron of the shoe. Then the shoe (with calk attached) being brought to the proper heat, is reversed, so as to allow the sharp edge of the calk to be placed in the corresponding space in the Die, and the welding is completed by blows struck upon the upper surface of the shoe.

THOS. C. CLARK, Agent,

Nos. 159 and 161 Lake Street, Chicago, Ill.



P(10)

T₂(18.16%) = 17.9° K

1.941

P63.2 E

(85)



